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Psychology Without a Soul

A CRITICISM

BY

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Foreword

SCHOLASTIC philosophical text-books, for the most part written in the Latin tongue, are to most English speaking people books sealed with seven seals. They may wonder how the language of the schoolmen may sound when translated into plain English, and what the scholastics may have to say on problems which are discussed to-day along the lines of experimental methods. By right scholastic philosophy is dead; if it seems to live, well, it does so only "*patientia Dei et stultitia hominum*" (through the patience of God and the folly of men). The late Prof. Paulsen has probably portrayed the attitude of many, when he says:

"If scholastic philosophy is at present experiencing a kind of revival in the school of Catholicism, this is due, not so much to its own inner vitality as to its supposed fitness to serve an ecclesiastical political system, which, through the favor of circumstances,— *patientia Dei et stultitia hominum,* an old Lutheran would say,— has attained again in our time to unexpected power. Moreover, there still

remains the question whether continuance of existence is in general something of which a philosophy can boast. Perhaps fruitfulness is a better characteristic and this the Kantian philosophy shows; it still gives rise to new systems of thought. Thomism, on the contrary, though of course a great achievement for its own time, yields to-day nothing except unfruitful repetitions. It does not set free the spirit, it enslaves it, which of course is just its intention." (Quoted by Mr. J. L. Perrier, The Revival of Schol. Phil., p. 1 sq.)

As to the "fruitfulness" of the Kantian system, in that it has given and "still gives rise to new systems of thought," of course, this "fruitfulness" itself must be judged by the nature of the "fruits" it yields; for an error too may be, and as a rule is fruitful. But waiving the Kantian system and its fruitfulness, we are concerned here with the accusation, that the interest attaching to scholastic philosophy is only an historical one, in as far as it was "a great achievement for its own time"; that scholastic philosophy, as presented to-day in Catholic centres of learning, "yields nothing except unfruitful repetitions"; that it is really only *"patientia Dei et stultitia hominum,"* that scholastic philosophy has survived. It will be best to meet these accusations by presenting a concrete example of

scholastic discussion; and it is with this end in view that the present book is written.

Scholastic philosophy "does not set free the spirit." By adhering unflinchingly to unalterable basic principles, it does not indeed grant that freedom of thought whose real name is unrestrained license; but by enforcing such limitations it does not "enslave the mind" and impede true progress, any more than the banks of a mighty river can be said to impede its progress, whilst restraining it from paths of ruin and destruction.

If power of adaptation is a criterion of inner vitality, scholastic philosophy has it. As in the days of St. Thomas and of the other great exponents of scholasticism, so to-day it is able to cope successfully with the great problems of the day. It was admittedly a great power in days gone by, and we are gratified in accepting the concession that it "has attained again in our time to unexpected power"; and we add that it is destined to wield this power beyond the limits of ecclesiastical circles, for society at large. For it alone can stem the tide of materialism and agnosticism which are sapping the life blood of modern society.

We live in an era of materialism. *Psychology,* that very science which of its nature

is calculated to "set free the spirit" from the thraldom of matter, has taken a materialistic turn, in that it has come to discard the *soul.* Modern psychology is essentially a *psychology without a soul.* But here I have — without apology — used a term which most exponents of modern psychology will resent: *materialism.* I have called modern psychologists *materialists* because they deny the existence of a substantial spiritual soul; and against this they almost unanimously protest.

There is an opprobrium attached to the word *materialism,* which has so far overshadowed its traditional and real significance, that both the defenders and adversaries of the soul in psychology feel justified in *disclaiming materialism.* Old-fashioned materialism was what may be called *hard* materialism; it did not shrink from such harsh words as were used by Büchner of "Kraft und Stoff" fame. Nowadays we have a *soft* materialism, which repudiating such language, says that its real name is *psycho-physical parallelism;* such is at least the principal type of *soft* materialism. It insists, indeed, that, as far as explanations are concerned, "*matter shall hold all the power*" (James, Pr. of Psych. I, p. 135); still the opprobrious term of materialism must be

avoided. Mr. Hodgson, discussing the problem of free will, did not hesitate to call himself a "*free will-determinist*" (Cf. James, The Will to Believe, etc., p. 149); similarly psychophysical parallelists should be classed as "*spiritualistic materialists.*"

It is not within the limits of this Foreword to explain all these terms; I shall do so in due time, when I shall give all the prominence desirable to the *disclaimers of materialism* on the part of the late Prof. James, of Prof. Wundt and Titchener,— to mention only some of the principal exponents of *Psychology Without a Soul.* Here I wish only to explain why, in spite of their protests, I have called their doctrine *materialism.* I use the term in its original and traditional scholastic sense. Whatever else the term may imply — it has passed through various meanings in the course of time,— *materialism* designates that doctrine *which acknowledges nothing substantial in this visible universe, except matter:* and this modern psychologists teach when they deny the substantial spiritual soul of man. This they do not disclaim; and *this I designate materialism.* The "*spirituality*" of the "passing Thought" ("with a capital T") of James, the "interactionist" of the "transmission-

type" (Cf. Pr. of Psych. I, pp. 338, 342, 346), as well as the "spirituality" devised by "psycho-physical parallelists" who designate mental processes "*epiphenomena*" rather than "*phenomena*" of *matter:* — all these are but ill disguised forms of *materialism in the traditional sense.* To adapt the words of Prof. James in his "Dilemma of Determinism" to our present subject, "all this is a quagmire of evasion under which the real issue" in the discussion of *materialism* "has been entirely smothered." (l. c.) I do not feel called upon to abstain from using this term because there is an *opprobrium attached to it.*

The cover design of this book may mystify the reader. When with us he shall have carefully examined the disclaimers of materialism on the part of modern psychologists, he will recognize in this design the pithiest expression, in cartoon form, of *Psychology Without a Soul.* For further explanations of the design I refer the reader to the sixth chapter.

It is imperative for all students of *rational psychology* whose claims we defend, that they should keep in constant touch with the current of thought prevalent in this country and abroad. Thus St. Thomas did in his day; thus we should do to-day. After all the study

of psychology which absorbs to-day such a universal interest, is not intended only for the class room. Every ecclesiastical student should be able to meet the exponents of modern thought; he must know their doctrines and the very terminology in which they are expressed. With this end in view I have tried to keep in touch with this current of thought, whilst giving a complete account — not indeed of rational psychology — but of one of the principal questions discussed in rational psychology as taught by scholastics. I have accordingly quoted profusely from standard modern works, especially from those most widely used in this country: the works of the late Prof. James of Harvard and of Prof. Titchener of Cornell University. I wish to state here — once for all — that the *italics* in these quotations *are frequently my own.*

This book professes to be *a criticism,* but this, of course, must not be construed to mean an attack on science. In particular it must not be interpreted as an attack on the real advances made of late years in the field of experimental psychology. To disparage anything that deserves the title of science, properly so called, would be the height of folly, and I feel confident that by nothing I have said in the follow-

ing pages, have I laid myself open to the charge of attempting anything so preposterous. But science is one thing, and what sometimes lays claim to that title, is quite another. Experimental psychology, like any other science, "is a science of fact, its questions are questions of fact." Hypotheses, of course, are not excluded from its domain, but "the treatment of hypotheses must be as rigorous and critical as competent scientists are accustomed to demand in other departments of research." If the principles thus laid down by Prof. Baldwin in his Handbook of Psychology (Preface, p. 111) were strictly adhered to in modern psychological works, we should have no fault to find. But when exponents of modern psychology overstep the limits of experimental research and make unwarranted assumptions; when they indulge in speculations which are irreconcilable with plain facts; when they construct for us a system of philosophy, "eine Weltanschauung"— the Germans would say — on the basis of such unwarranted assumptions, then we protest, and we do so, not only in the name of sound philosophy, but in the name of science itself; for empirical research itself can only be hampered by such fetters of unwarranted dogmatic assumptions.

Acknowledgment is due to *Messrs. Henry Holt and Co., New York,* for kindly permitting me to use the central figure of the cover design which is substantially taken from James' Principles of Psychology, Vol. I., p. 25.

THE AUTHOR.

St. Louis University, June, 1911.

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PSYCHOLOGY WITHOUT A SOUL

Chapter I

Evolving Evolution: the Origin of Psychology Without a Soul

A FEW years after the publication of Darwin's famous "Origin of Species" William Kingdon Clifford, then an undergraduate of Trinity College, Cambridge, penned a little apologue, which as his biographer informs us, "caught the attention of some good judges at the time." [1] It runs as follows:

"Once upon a time — much longer than six thousand years ago — the Trilobites were the only people that had eyes; and they were only just beginning to have them, and some of the Trilobites had as yet no signs of coming sight. So that the utmost they could know was that they were living in darkness, and that perhaps there was such a thing as light. But at last one of them got so far advanced that

[1] Cf. Lectures and Essays by William Kingdon Clifford, with an Introduction by F. Pollock, London, 1886, p. 8.

when he happened to come to the top of the water in daytime he saw the sun. So he went down and told the others that in general the world was light, but there was one great light which caused it all. Then they killed him for disturbing the commonwealth; but they considered it impious to doubt that in general the world was light, and that there was one great light which caused it all. And they had great disputes about the manner in which they had come to know this. Afterward another of them got so far advanced that when he happened to come to the top of the water in the night-time he saw the stars. So he went down and told the others that in general the world was dark, but that nevertheless there was a great number of little lights in it. Then they killed him for maintaining false doctrines: but from that time there was a division among them, and all the Trilobites were split into two parties, some maintaining one thing and some the other, until such time as so many of them had learned to see, that there could be no doubt about the matter."

What Clifford in this apologue only hinted at, he in later life stated with all the emphasis of an out-and-out materialist and evolutionist. There was magic in the word *evolution;* on all sides men seized upon the new idea and applied it to everything. They much out-darwined Darwin; they evolved evolution itself and shook the very foundations of all departments of science and philosophy, and, not least

of all, they revolutionized the science of *psychology.*

Psychology without a soul is a natural child of *evolving evolution.* By this term we do not designate that form of the theory of evolution which remains strictly within the limits of a scientific hypothesis and expects to be judged by the tests of a scientific hypothesis. By *evolving evolution* we mean that theory which in materialistic circles long ago ceased to be a debatable question, and is a fundamental assumption, an axiom, in the light of which all facts of experience must be judged and every problem must be solved. We mean that all-embracing dogma of evolution to which Tyndall gave expression in his Belfast address, when he said:

"Abandoning all disguise, the confession that I feel bound to make before you is that I prolong the vision backward across the boundary of the experimental evidence, and discern in that matter, which we in our ignorance, and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium, the promise and potency of every form and quality of life." (Nature, Aug. 20, 1874, p. 317 sq.)

The evolutionary hypothesis, then, of which we speak, demands that we "prolong the vision

backwards across the boundary of experimental evidence" and holds that "in our ignorance we have hitherto covered matter with opprobrium," in that we thought it incapable of giving rise to "every form and quality of life." In making this postulate Tyndall was fully aware that,

"if we look at matter . . . as defined for generations in our scientific text-books, the absolute impossibility of any form of life coming out of it would be sufficient to render any other hypothesis preferable; but the definitions of matter given in our text-books were intended to cover its *purely physical and mechanical* properties. And taught as we have been to regard these definitions as complete, we naturally and rightly reject the monstrous notion that out of *such* matter any form of life could possibly arise. But are the definitions complete? Everything depends on the answer to be given to this question" (l. c.).

No doubt, everything depends on the answer to be given to this question. If *facts* are to guide us, then — to begin with — the famous experiments of Pasteur and all subsequent researches have rather widened the impassable gulf between living and non-living matter and we are to-day further removed than ever from discerning in that matter with which physics

and chemistry deal "the promise and potency" of even the *lowest* form of life.

Again, if *facts* are to guide us, the *phenomena of consciousness,* the manifestations of sensitive and rational life, are such that they are admitted on all sides to be utterly incommensurable with facts of the physical order. As Prof. James says,

"even the vaguest of evolutionary enthusiasts, when deliberately comparing material with mental facts, have been as forward as any one else to emphasize the 'chasm' between the inner and the outer worlds" (Pr. of Psych. I, p. 146).

Even Tyndall in that very address, from which we have quoted above, is forced to admit this "chasm." He says:

"We can trace the development of a nervous system, and correlate with it the parallel phenomena of sensation and thought. We see with undoubting certainty that they go hand in hand. But we try to soar in a vacuum the moment we seek to comprehend the connection between them. . . . There is no fusion possible between the two classes of facts — no motor energy in the intellect of man to carry it *without logical rupture from the one to the other*" (Nature, l. c. p. 318).

James, commenting on this remarkable passage from Tyndall's address, characterizes with

commendable frankness the spirit which animates the thorough-going evolutionists:

"None the less easily, however, *when the evolutionary afflatus is upon them,* do the very same writers *leap over the breach whose flagrancy they are the foremost to announce,* and talk as if mind grew out of body in a continuous way. . . . *So strong a postulate is continuity!*" (Pr. of Psych. I., p. 147 sq.)

After this denunciation of the "postulate of continuity" it must come to the reader as a distinct surprise, when James continues:

"Now this book will tend to show that mental postulates are on the whole to be respected. The demand for continuity has, over large tracts of science, proved itself to possess true prophetic power. *We ought therefore ourselves sincerely to try every possible mode of conceiving the dawn of consciousness so that it may not appear equivalent to the irruption into the universe of a new nature, non-existent until then*" (l. c. p. 148).

Verily, the same "evolutionary afflatus was upon him" when he penned this. Accordingly he goes on to explain that it will not serve our turn to speak with Spencer of "nascent" consciousness. He insists that this is but "a verbal quibble" (l. c. p. 149) and points out that "in showing how at a certain point con-

sciousness must appear upon the evolving scene," Spencer "fairly outdoes himself in vagueness" (l. c. p. 148, note).[2] Spencer, then, was not radical enough in his evolutionary hypothesis, and though he tries to defend himself against this charge in the Fortnightly Review (vol. XIV, p. 716) he really only aggravates his case.

"That, when a critic calls his attention to the inanity of his words, Mr. Spencer should say he

[2] Prof. Wundt's evolutionary scheme would seem to be no less vague than that of Spencer. Basing his views on the phenomena of irritability and contractility which are found in the lowest forms of life and resemble voluntary movements, Prof. Wundt says:

"From the standpoint of observation, then, we must regard it as a highly probable hypothesis that the beginnings of the mental life date from as far back as the beginnings of life at large. The question of the origin of mental development thus resolves itself into the question of the origin of life. Further, if physiology is obliged, by the uniformity of interaction of physical forces throughout the universe, to accept the postulate that the processes of life have their ultimate basis in *the general properties of matter,* psychology finds it no less obligatory to assume, *in this same matter,* the universal substrate of natural phenomena, *the presence of conditions which attain to expression as the psychical aspect of vital phenomena*" (Pr. of Phys. Psych., transl. by Titchener, 1904, Vol. I, p. 31).

The "nascent" consciousness of Spencer is hardly less vague than "the presence of conditions which attain to expression as the psychical aspect of vital phenomena," nor is this expression made any clearer by Wundt's further explanation. "But this latter statement," he continues, "must not mislead us. The *latent life of inorganic matter* must not be confused, as *hylozoism* confuses it, with *real* life and *actual consciousness;* nor must it be considered, *with materialism, as a function of matter*" (l. c. p. 31 sq.).

As to the experimental basis which Prof. Wundt claims for his evolutionary scheme ("from the standpoint of observation") we shall see in our chapter IV, what this amounts to. The disclaimer of *materialism* will receive due attention especially in chapter VI.

never meant anything particular by them, is simply an example of the scandalous vagueness with which this sort of 'chromo-philosophy' is carried on" (l. c. p. 149, note).

We must, then, be radical with the evolutionary hypothesis. Hence James postulates with all the emphasis that italics can give:

"*If evolution is to work smoothly, consciousness in some shape must have been present at the very origin of things.* Accordingly we find that the more clear-sighted evolutionary philosophers are beginning to posit it there" (l. c. p. 149).

The Primeval Nebula and Its "Aboriginal Atoms of Consciousness."

This brings us to what has been aptly styled "*atomic psychology*" and is thus explained by Prof. James:

"Each atom of the nebula, they suppose, must have had *an aboriginal atom of consciousness* linked with it; and just as the material atoms have formed bodies and brains by massing themselves together, *so the mental atoms,* by an analogous process of aggregation, *have fused into those larger consciousnesses which we know in ourselves and suppose to exist in our fellow-animals.* Some such doctrine of *atomistic hylozoism* as this is an indispensable part of a thorough-going philosophy of evolution" (l. c.).

As James is so hard on Spencer because of the "scandalous vagueness" of his "nascent consciousness," the question is pertinent whether "the aboriginal atom of consciousness" linked with "each atom of the nebula" is really more intelligible, and what meaning he may possibly have attached to the phrase that "the mental atoms" have in the process of evolution by aggregation "fused into those larger consciousnesses which we know in ourselves." But James has forestalled this question: he grants that his postulate is "logically unintelligible" (l. c. p. 158); in fact he is just as emphatic in denouncing the "unintelligibility" of this postulate (l. c.) as he is in demanding it as "an indispensable part of a thorough-going philosophy of evolution": a sore dilemma indeed. He will require some mental gymnastics to extricate himself from its horns. But of that later on.

Evolution and the "Mind-Stuff-Theory.'

The most radical form of this evolutionary psychology is that proposed by William Kingdon Clifford, and is known as the *"mind-stuff-theory."* Before proceeding, however, to explain it, it may be well to be frank with the reader and to let him know just what he is to

expect. James begins his chapter on the "mind-stuff-theory" with the following caution which we endorse:

> "The reader who found himself swamped with too much metaphysics in the last chapter will have a still worse time of it in this one, which is exclusively metaphysical" (l. c. p. 145).

Surely the evolutionary scheme which we have thus far been considering is a rather strong dose of metaphysics of the blackest kind; at any rate it has nothing to do with science. If by some enthusiasts it is nevertheless labelled "science," this is about as correct a use of the term "science" as would be the use of the term "symphony orchestra" as applied to a noisy fog-horn. The reader, then, who is not yet tired of "evolving evolution" and is desirous of seeing how "Psychology without a Soul" is evolved, must willy-nilly be reconciled to his fate: before he is through with this chapter, he will have been swamped with metaphysics. That is the only consolation the writer can offer. Courage! it will get worse.

Now to the mind-stuff-theory! It is, in the words of Prof. James "the theory that our mental states are compounds, expressed in its

most radical form" (l. c. p. 145). For a fuller explanation of it we shall quote from an article of Clifford originally published in "Mind" (January, 1878) and entitled "On the Nature of Things-in-themselves." What bearing this Kantian problem has on the subject under discussion, may not be so clear at first sight, but it will gradually dawn upon the reader, if he constantly keeps in mind that we are here dealing with a new conception of matter, a conception which no longer "covers it with opprobrium," and if he considers that we must look at this mind-matter through the spectacles of Kantian forms. Clifford thus leads up to the subject:

"We have regarded consciousness as a complex of feelings. . . . But does not the elementary feeling itself imply a consciousness in which alone it can exist, and of which it is a modification? Can a feeling exist by itself, without forming a part of consciousness?" (Lectures and Essays by William K. Clifford, Macmillan and Co., 1886, p. 283).

Clifford, then, starts out with what James has rightly called "one of the obscurest of the assumptions" of modern psychology. This is the assumption "that our mental states are composite in structure, made up of smaller states conjoined" (Pr. of Psych. p. 145), and

the simplest element of our mental states, even of the subtlest reasoning process, is, according to Clifford, "a feeling," not indeed a feeling in the ordinary acceptation of the term,— this in turn is a complex,— but an elementary feeling. The two questions which are suggested to Clifford by this assumption, are, it is true, somewhat abstruse and may bewilder the reader. They did not dismay Clifford, who answers them as follows:

"I shall say *no* to the first question, and *yes* to the second, and it seems to me that these answers are required by the doctrine of evolution. For if that doctrine be true, we shall have along the line of the human pedigree a series of imperceptible steps connecting inorganic matter with ourselves" (l. c.).

Speculating further and further on the nature of the elementary feeling with which the very remotest ancestors of man — the atoms of the primeval nebula — were endowed; and considering this elementary feeling in the light of the Kantian "thing-in-itself," Clifford culminates his speculations with the following remarkable passage:

"*Mind-stuff is the reality which we perceive as matter.* That element of which, as we have seen, even the simplest feeling is a complex, I shall call

mind-stuff. A moving molecule of inorganic matter does not possess mind or consciousness; but it possesses *a small piece of mind-stuff*. When molecules are so combined together as to form the film on the under side of a jelly-fish, the elements of mind-stuff which go along with them are so combined as to form the faint beginnings of Sentience. When the molecules are so combined as to form the brain and nervous system of a vertebrate, the corresponding elements of mind-stuff are so combined as to form some kind of consciousness. . . . When matter takes the complex form of a living human brain, the corresponding mind-stuff takes the form of a human consciousness, having *intelligence and volition*" (l. c. p. 284).

The doctrine here expounded is, according to Clifford, not only a postulate of evolution and of the Kantian theory of perception (l. c. p. 286), but

"appears to have been arrived at independently by *many* persons; . . . the first statement of the doctrine in its true connection that I know of is by *Wundt*. Since it dawned on me, some time ago, I have supposed myself to find it more or less plainly hinted in many writings; but the question is one in which *it is peculiarly difficult to make out precisely what another man means, and even what one means one's self*" (l. c. p. 286).

Whether Prof. Wundt is really an exponent of the mind-stuff-theory, we do not venture

to decide. Considering that we are dealing with a question, "in which it is peculiarly difficult to make out precisely what another man means, and even what one means one's self," we think it safer not to accuse anyone of the theory, but to abide by authority; and we have it on the authority of Prof. James that besides Clifford the following authors are adherents of the mind-stuff-theory: G. T. Fechner, H. Taine, E. Haeckel, S. Duncan, H. Zöllner, Alfred Barrat, J. Soury, A. Main, F. W. Frankland, Whittaker, Morton Prince, A. Riehl.[3] As the reader will remark, Prof. Wundt is not on the list. We would venture, however, to add the name of Prof. Theodor Meynert, so frequently referred to by James in his chapter on "The Functions of the Brain." Thus at least we translate a passage from one of Meynert's lectures on the structure and functions of the brain.[4]

Prof. James himself is utterly disgusted with the mind-stuff-theory. Perplexed in the extreme he writes:

"What shall we do? Many would find relief at

[3] The references may be found in James, Pr. of Psych. I, p. 159, note.

[4] He says: "Bewusstseinsfähigkeit muss im Wesen des Atoms schlummern, sonst könnte ein Complex von Atomen, unser Gehirn, nicht Bewusstsein haben" (Sammlung von pop.-wiss. Vorträgen über den Bau und die Leistungen des Gehirns, p. 20).

this point in celebrating the mystery of the Unknowable and the 'awe' which we should feel at having such a principle to take final charge of our perplexities. Others would rejoice that the finite and separatist view of things with which we started had at last developed its contradictions, and was about to lead us dialectically upward to some 'higher synthesis' in which inconsistencies cease from troubling and logic is at rest. It may be a constitutional infirmity, but I can take no comfort in such devices for making a luxury of intellectual defeat. They are but spiritual chloroform. Better live on the ragged edge, better gnaw the file forever" (Pr. of Psych. I., p. 178 sq.).

But this, of course, does not yet extricate James from his dilemma, for he was, as the reader will remember, most emphatic in insisting that "*evolutionary psychology demands a mind-dust*" (l. c. p. 146 sq.).

Evolution and the Production-Theory.

Other evolutionary psychologists use a simpler formula for expressing the growth of mind out of inorganic matter. They simply state that the brain produces thought "much as it engenders cholesterin and creatin and carbonic acid," that rational thought, therefore, is just as truly a function of the brain, "as steam is a function of the tea-kettle" (cf.

James, Human Immortality, p. 13). This is known as the *production-theory,* and is branded even in materialistic circles as *materialism,* not worthy of serious consideration. In a future chapter we shall consider some of the exponents of this theory.

The Phosphorescence-Theory.

Others again, running a variation upon this, namely that thought is a sort of phosphorescence, call their improvisation the *phosphorescence-theory.* Though very much discussed some fifty years ago the theory is now practically dead. Still it is a notable episode in the history of "evolving evolution" and hence the following remarks of James on the subject may find a place here:

"'*Ohne Phosphor, kein Gedanke,*' was a noted war-cry of the 'materialists' during the excitement on that subject which filled Germany in the '60s. The brain, like every other organ of the body, contains phosphorus, and a score of other chemicals besides. Why the phosphorus should be picked out as its essence, no one knows. It would be equally true to say 'Ohne Wasser kein Gedanke,' or 'Ohne Kochsalz kein Gedanke'; for thought would stop as quickly if the brain should dry up or lose its NaCl as if it lost its phosphorus. In America the phosphorus-delusion has twined itself round a saying

quoted (rightly or wrongly) from Prof. L. Agassiz, to the effect that fishermen are more intelligent than farmers because they eat so much fish, which contains so much phosphorus. All the facts may be doubted" (l. c. p. 101).

The Transmission-Theory.

James deriding these "phosphorus-philosophers," as he calls them (l. c. p. 102), has devised another way of conceiving how thought is really and truly a function of the brain and of positing consciousness in the beginning of things without calling it "nascent" or grinding it to "mind-dust," and thus, by giving a little twist to one of the horns of the dilemma, he extricates himself with admirable ingenuity from both of them. He says that thought processes are really going on all the time, that "it thinks" all around us, and that the human brain is only a sort of filter, through which thought processes are continually dribbling, thus becoming what we are liable to call personal thought; and this he calls the *transmission-theory*. The following is an account of it as contained in his Ingersoll lecture on Human Immortality:

"Suppose, for example, that the whole universe of material things — the furniture of earth and

choir of heaven — should turn out to be a mere surface-veil of phenomena, hiding and keeping back the world of genuine realities. Such a supposition is foreign neither to common sense nor to philosophy. Common sense believes in realities behind the veil even too superstitiously; and idealistic philosophy declares the whole world of natural experience, as we get it, to be but a time-mask, shattering or refracting the *one infinite thought* which is the sole reality into those millions of *finite streams of consciousness* known to us as our private selves. 'Life, like a dome of many-colored glass, stains the white radiance of eternity.' Suppose, now, that this were really so, and suppose, moreover, that the dome, opaque enough at all times to the full super-solar blaze, could at certain times and places grow less so, and *let certain beams pierce through into this sublunary world.* These beams would be so many finite rays, so to speak, of consciousness, and they would vary in quantity and quality as the opacity varied in degree. Only at particular times and places would it seem that, as a matter of fact, the veil of nature can grow thin and rupturable enough for such effects to occur. But in those places gleams, however finite and unsatisfying, of the *absolute life of the universe,* are from time to time vouchsafed. Glows of feeling, glimpses of insight, and *streams of knowledge and perception float into our finite world.* Admit now that *our brains are such thin and half-transparent places in the veil.* What will happen? Why, as the white radiance comes through the dome, with all sorts of staining and distortion imprinted on it by the glass, . . .

even so the genuine matter of reality, the life of souls as it is in its fullness, *will break through our several brains* into this world in all sorts of restricted forms, and with all the imperfections and queernesses that characterize *our finite individualities here below.* According to the state in which the brain finds itself the barrier of its obstructiveness may also be supposed to rise or fall. It sinks so low, when the brain is in full activity, that a comparative flood of spiritual energy pours over. At other times, only such *occasional waves of thought* as heavy sleep permits get by. And when finally a brain stops acting altogether, or decays, *that special stream of consciousness* which it subserved *will vanish entirely* from this natural world. But *the sphere of being that supplied the consciousness would still be intact.* . . . You see that, on all these suppositions, our soul's life, as we here know it, would none the less in literal strictness *be the function of the brain"* (Human Immortality, pp. 15–18).

The Stream-of-Thought Theory.

There are others again, who doubt or ignore altogether this transmission-theory. Professor James, in fact, complains that "the ordinary psycho-physiologist leaves (it) out of his account" (l. c. p. 15). Still many hold to that part of it which deals with the "stream of thought," because it does away with certain unscientific modes of expression, as for in-

stance, with the old humdrum way of saying "I think" which implies a thinker behind the thought and is one of those relics of psychology before it reached the stage of "science." Now this is called the "*stream-of-thought theory.*" James explains it at great length in his Principles of Psychology (l. c. ch. IX, p. 224–290), and we shall have more to say of it in another chapter.

Mind but a Function.

The elimination of what in days of mythological thinking went by the name of a substantial subject of thought, marked the real starting point for "scientific" psychology, as Prof. Wundt informs us (Physiolog. Psychologie, ed. 5, vol. III, p. 756 sqq.). All are agreed that "mind" is but a *function.* It is a matter of great dispute, however, as to whether mind is a function running *parallel* to brain work or whether it is *causally related* to brain work. The first way of conceiving it is called the theory of *psycho-physical parallelism,* which we shall consider at greater length in a future chapter. The other is known as the *theory of psycho-physical interaction,* of which we have noted some varieties.

The "Belated Scholastics" Not in the Race.

It was in this great era of scientific development that the foundations of the new psychology were laid. The "belated scholastics," of course, were not in the race at all. They held, as they did of yore, to the naïve idea, that psychology is, what it etymologically expresses, the science of the *soul* (psyche-soul; logos-science). And why did they hold to this? Because they have never grasped, and fail to do so even to-day in the light of the 20th century progress, "the great psycho-physiological formula: *thought is a function of the brain*" (cf. James, Human Immortality, p. 10). No wonder that Prof. James gives expression to his contempt for such unscientific modes of thought in the lecture referred to. Speaking of the materialistic, or what is the same "scientific" convictions prevalent everywhere he says:

"Almost any of our young psychologists will tell you that only a few belated scholastics, or possibly some crack-brained theosophist or psychical researcher, can be found holding back, and still talking as if mental phenomena might exist as independent variables in the world" (l. c. p. 9 sqq.).

A Misunderstanding.

It may be well to state here in parentheses, that the scholastics never claimed that "mental phenomena existed as independent variables in the world." Not only is the whole terminology foreign to scholastic philosophy, but also the doctrine that acts of cognition and volition are independent of the activity of the bodily organism and in particular of the brain. Reserving a fuller explanation of the scholastic doctrine for future chapters, we must be satisfied here with the following general remarks.[5] The scholastics ever maintained the dependence of all these acts on the bodily organism; but in determining the nature of this dependence they laid stress on a distinction which is sadly neglected or entirely obliterated in modern psychology. They drew a clear distinction between acts of the *sensitive* and the acts of the *intellectual* order. The former were ever held to be *organic functions,* i. e., acts of the vivified organ (of soul and body) and not of the soul alone; the latter, namely, acts of the *intellectual* order, though elicited by the

[5] It is interesting to note that the scholastic doctrine sketched here is *substantially* contained in Aristotle's *De Anima.* Cf. Stöckl-Finlay, History of Phil., Vol. I, pp. 118–123. Also Überweg, Hist. of Phil. (New York, 1871), Vol. I, p. 168. Concerning the doctrine of St. Thomas cf. S. Theol. I p., q. 77, a. 5 and I p., q. 84, a. 6, in c.

soul alone, were always considered as *conditioned* by (or "extrinsically dependent" on) the activity of the brain, as long as the soul remains united to the body. But this the scholastics always insisted upon, that *no* act of cognition or volition is an organic function in any *materialistic* sense, i. e., of a bodily organ without a soul, and that the acts of the *intellectual* order are not such, even in the sense in which they held those of the *sensitive* order to be *organic functions*. Rational thought and volition were ever considered to be activities of an immaterial nature, and hence the scholastics postulated for them a principle of an immaterial nature, the *spiritual soul*. That this doctrine is based on the most careful analysis of experimental facts, our subsequent chapters will show.

Discarding the Soul in Psychology.

In our parenthetical comment on Prof. James' contemptuous remark on the "belated scholastics" we used without apology a term, which psychology as a "science" has come to discard, *Soul*. Prof. James, after discussing this relic of scholasticism, winds up thus:

"I therefore feel entirely free to discard the word Soul from the rest of this book. If I ever use it,

it will be in the vaguest and most popular way" (Pr. of Psych., Vol. I, p. 350).[6]

Prof. Titchener is even more radical. Thus, for instance, in his article on "Psychology" in the Encyclopedia Americana he does not so much as mention the word Soul. If, therefore, we desire to know what psychology as a "science" or Psychology without a Soul is, we shall do well to examine the definition of the Cornell professor a little more closely. We read:

"Psychology has been defined, from time immemorial, as the science of mind. This definition, which agrees well with the etymological meaning of the word "psychology" may be accepted by the modern psychologist, provided that its two terms ('science' and 'mind') are themselves correctly defined."

A few remarks suggest themselves here. To begin with, the term "psychology" is of comparatively recent date. It came into universal use only after Chr. Wolff (†1754); before his day treatises which we now call "psychologies" were, after the example of Aristotle, usually inscribed "de Anima," i. e.,

[6] Clifford puts it thus: "To say: 'Up to this point science can explain; here the soul steps in,' is not to say what is untrue, but to talk nonsense" (Lectures and Essays, p. 278).

on the *Soul.* The term "psychology" occurs for the first time in the writings of Melanchton; as the title of a book, it was first used by Goclen (1590) and again by Casmann (Psychologia Anthropologica, 1594). (Cf. Eisler, Wörterbuch der Philos. Begriffe under "Psychologie," p. 1073, and his Literatur-Verzeichnis at the end of volume III.)

We do not want to make too much of this little inaccuracy. But we fail to see how Prof. Titchener's definition of psychology "agrees well with the etymological meaning" of the term; for "psyche" does not mean "mind" but "soul." It is true, that modern writers on the subject frequently confound the two terms and use them promiscuously, and to this usage we would not object, if it were really only a matter of terminology. Still, going back to times *"immemorial,"* say for instance to Aristotle, we must insist that *psyche* means *soul* and can no more be taken as synonymous with *mind,* than the term *kymograph* can be said to be synonymous with *writing-device. Psyche* in Aristotelian terminology means *principle of life,* and the psyche of man is the principle of man's threefold life: vegetative, sensitive, rational. In fact *psyche* says even more than that. It is the "entelecheia," the

"actus primus materiae." (Cf. De Anima, II, 1.) Prof. Titchener may or may not accept the Aristotelian doctrine, but he should not claim that when he translates *psyche* by *mind,* he is in accord with the meaning of the word from times *"immemorial."* [7]

But Prof. Titchener discards not only the word *"soul"* but the *reality* as well. We read:

"Now the subject-matter of psychology is mind: *not mind as popularly understood,* perhaps, but mind which is accessible to experiment" (l. c.).

Explaining the subject-matter of scientific psychology further he says:

"We all tend to say 'I think,' and so to separate the 'I,' as active thinker, from the 'thought' which is the result of the I's activity. *Psychology cannot recognize this distinction.* The datum for a psychology, if it is to be a scientific psychology, is rather *'thought goes on': 'there are processes of thought in the world'"* (l. c.).

Other materialistic psychologists, though they too discard the reality of the soul, show less irritability with regard to the word. Thus Prof. Wundt, after stating, once for all, that he means nothing unscientific when using the

[7] The Greek word corresponding to "mind" is "νοῦς."

word *Seele* (soul), uses it quite freely v. g. in his "Physiologische Psychologie." [8]

Psychology as a science, then, can and must do without a thinker back of the thought. To use the words of James, who perfectly agrees with Prof. Titchener:

"The passing thought then seems to be the Thinker; and though there *may* be another non-phenomenal Thinker behind that, so far we do *not seem to need him to express the facts*" (Pr. of Psych. I, p. 342).

"It Thinks."

The language which we have inherited from pre-scientific days, it is true, does not as yet lend itself to such scientific accuracy. This James deplores:

"If we could say in English '*it thinks,*' as we say '*it rains*' or '*it blows,*' we should be stating the fact most simply and with the minimum of assumption. As we cannot, we must simply say that *thought goes on*" (l. c. p. 224 sq.).

[8] Ebbinghaus in his Grundzüge der Psychologie says, it would be consummate pedantry, to exclude the word *soul* from psychology. We read: "Aber es wäre vollendete Pedanterie, daran Anstoss nehmen und etwa gar das Wort aus der Psychologie verbannen zu wollen" (l. c. I, p. 17).

Dr. Hellpach in his work: "Die Grenzwissenschaften der Psychologie" begins his treatise by stating that psychology etymologically considered is the *science of the soul.* He adds, however, that it deserves the name of science only after this definition has become wrong.

Before proceeding it may be well to state — once for all — that "Ego," "person," "subject of thought" and "*soul*" are by no means synonymous terms in scholastic philosophy. But for the present we can safely neglect such distinctions, because, if the *soul* in the scholastic sense is denied, all other terms become meaningless, as will become evident in the course of our discussion. In this chapter we are as yet not concerned with the proofs of the reality of the soul, but only with the *wonderful evolution* of "scientific" psychology in our times.

One of the phases of this evolution is the gradual adaptation of inherited language to the demands of "scientific" psychology. "Science" demands that we dispense with the thinker behind the thought. Let us see how our experiences — i. e., what in the days of mythological thinking went by the name of "*our*" experiences — should be expressed, after we have dispensed with the thinker. From sheer want of scientific training we are liable to describe our experiences in the course of a day something like this: "I got up, say at 5 o'clock; I took my breakfast; I read the newspaper; I settled my correspondence, etc." That's unscientific; that is the old way

of speaking. Here is the *scientific* way of expressing all this.

Mind Splits up Into Consciousnesses: Getting-up Consciousness, Breakfast Consciousness, Etc.

We read in the article of Prof. Titchener:

"Mind splits up into 'consciousnesses.' A consciousness is a mental present; a mind that has a temporal 'now' stamped upon it; *a bit of mind* that is occupied with a single, however complicated, topic. Thus, to put the matter crudely, we begin the day with a getting-up consciousness; this is followed by a breakfast consciousness; this by a newspaper or correspondence consciousness; this by a daily-work consciousness; this by a luncheon consciousness; and so on" (l. c.).

One remark suggests itself here. We find it pardonable that Prof. Titchener, in the rest of the article, uses the terms "*I*" and "*We*" quite freely after the old fashion; but in this "scientific" passage, where the splitting of mind into consciousnesses begins, it sounds odd to see him prefix the old-timer, the personal pronoun "*we*" before the first bit of consciousness. Thus: "WE begin the day with a getting-up consciousness." We must confess it is hard to suggest a proper correction of the passage, as some hook seems to be needed

to which the various bits of consciousnesses can be attached. In a future edition of the Americana, however, an attempt should be made to eliminate the initial "*we.*"

Though Prof. Titchener's description of a man's daily experiences marks a great advance over the old way of expressing it, the late Prof. James did *not entirely* approve of it, because it can be rendered still more scientific. Even if the initial "*we*" were successfully eliminated, there is still an unscientific ring to it. The word "*con*-sciousness" should be eliminated as well; for as long as that term remains we do not seem to eliminate the *ego* altogether. To have such a thing as "breakfast *con*-sciousness" seems after all to mean that "I" take my breakfast, and that "I" am somewhat interested in, or at least aware of, that performance; and there we are in the old rut again. According to Prof. James, mind does not, strictly speaking, split up into *con*-sciousnesses, but into *sciousnesses,* i. e., into that element of it which remains, when we cross out the grammatical prefix *con.* Here is what James says on this subject:

Strictly Speaking Mind Does Not Split Into CONSCIOUSNESSES But Into SCIOUSNESSES.

"Instead, then, of the stream of thought being one of *con*sciousness, 'thinking its own existence along with whatever else it thinks' (as Ferrier says), it might better be called a stream of *sciousness* pure and simple, thinking objects of some of which it makes what it calls a '*me*,' and only aware of its 'pure' Self in an abstract, hypothetic or conceptual way. Each 'section' of the stream would then be *a bit of sciousness* or knowledge of this sort, including and contemplating its '*me*' and its '*not-me*' as objects *which work out their drama together,* but not yet including or contemplating its own subjective being. The *sciousness* in question would be the *thinker,* and *the existence of this thinker would be given to us rather as a logical postulate than as that direct inner perception of spiritual activity which we naturally believe ourselves to have.* 'Matter,' as something behind physical phenomena, is a postulate of this sort. *Between the postulated matter and the postulated thinker, the sheet of phenomena would then swing,* some of them (the 'realities') pertaining more to matter, others (the fictions, opinions, and errors) pertaining more to the Thinker. But *who* the Thinker would be, or how many distinct Thinkers we ought to suppose in the universe, would all be subjects for an ulterior metaphysical inquiry" (Pr. of Psych. I. p. 304).

"I" and "Me" After All Only Names of Emphasis.

Now this is out-hegeling Hegel in search for scientific language. The "me" and "not-me" of Prof. James work out indeed a drama, which puts many a farcical comedy into the shade. The reader may find it tiresome to wade through so much metaphysics of the blackest kind, still with his leave we shall — for the sake of science — say a word more on the true meaning of "*I*" and "*me*," "*thou*" and "*thee*." For the trouble is, these terms, unscientific though they be, seem to be hopelessly unavoidable. Even Professors James and Titchener, in spite of their scientific protests, use them quite as freely as the rest of us.

After discussing the subject of *self-consciousness* for about 40 pages more (and that is by no means the end), Prof. James in a foot-note on p. 341 comes back to the speculation just quoted. The note reads:

"Some subtle reader will object that the Thought cannot call any part of its object 'I' and knit other parts on to it, without first knitting that part on to *itself;* and that it cannot knit it onto itself without knowing Itself; — so that our supposition (above, p. 304) that the Thought may conceivably have no immediate knowledge of itself is thus overthrown. To which the reply is that we must take

care not to be duped by words. The words *I* and *me* signify nothing mysterious and unexampled — they are at bottom *only names of emphasis;* and Thought is always emphasizing something. Within a tract of space which it cognizes, it contrasts a *here* with a *there;* within a tract of time a *now* with a *then:* of a pair of things it calls one *this,* the other *that.* *I* and *thou, I* and *it,* are distinctions exactly on a par with these,— distinctions possible in an exclusively *objective* field of knowledge, the 'I' meaning for the Thought nothing but the bodily life which it momentarily feels. The sense of my bodily existence, however obscurely recognized as such, *may* then be the absolute original of my conscious selfhood, the fundamental perception that *I am.* All appropriations *may* be made *to* it, *by* a thought not at the moment immediately cognized by itself. Whether these are not only logical possibilities but actual facts is something not yet dogmatically decided in the text" (l. c.).

Warm Thoughts — Cold Thoughts.

Now we shall not wait for this dogmatic decision in the text. We should have to dwell on a distinction, which Prof. James has elucidated before at great length (cf. v. g. pp. 331, 333, 339), and on the thorough grasp of which the understanding of his subsequent speculations depends to a great extent, namely, on the distinction between *warm* and *cold* thoughts,

the former belonging to the "*me*," and the latter to the "*not-me*" (l. c. p. 331). We must for the present forego the pleasure, even at the risk of not completely realizing how the Arch-Ego of the olden days is eliminated in "scientific" psychology.

It would seem, then, that evolution must evolve a little more, before the acme of perfection in scientific psychology is reached. Though our present day psychologists have survived the struggle for existence, there will be a day when fitter ones with fitter language will survive, and they in turn will smile at the struggle of our days and be smiled at by still later survivals.

The "Evidences" of Evolving Evolution.

So much for the origin and growth of *Psychology without a Soul*. That the evolutionary hypothesis is one of the fundamental suppositions of modern psychology, is sufficiently evident from quotations set down in the beginning of the chapter. If more be desired, we choose preferably some passages from a little book which, primer-like, is to bring the achievement of modern science in this regard even within the reach of the young. The following passages are from "*The Story of the*

Mind," by J. M. Baldwin, Prof. of Psych. in Johns Hopkins University. In the preface he says:

"It will be remarked that in several passages the *evolution theory* is adopted in its application to the mind. While this great theory cannot be discussed in these pages, yet I may say that, in my opinion, the evidence in favor of it is about the same, and about as strong, as in biology, where it is now made a *presupposition of scientific explanation"* (l. c. p. VI).

On page 53 sq. we read:

"To investigate the child by scientific methods is really to bring into psychology a procedure which has revolutionized the natural sciences; and it is destined to revolutionize the moral sciences by making them also in a great measure natural sciences. The new and important question about the mind which is thus recognized is this: *How did it grow?* What light upon its activity and nature can we get from a positive knowledge of its early stages and processes of growth? This at once introduces other questions: How is the growth of the child related to that of the animals? — How, through heredity and social influences, to the growth of the race and of the family and society in which he is brought up? *All this can be comprehended only in the light of the doctrine of evolution, which has rejuvenated the sciences of life; and we are now beginning to see a rejuvenation of the sciences of*

mind from the same point of view. This is what is meant when we hear it said that psychology is becoming 'genetic.'"

It is not within the scope of this chapter to discuss the evolutionary hypothesis in its general biological aspects. The popular forms of the hypothesis have, to put it mildly, very weak legs to stand on. With regard to Darwin's theory of "Natural Selection" a few remarks from Fr. Wasmann's "Modern Biology and the Theory of Evolution" may suffice:

"Most naturalists have by this time abandoned the theory in its exclusive form. An eminent modern zoologist, Dr. Hans Driesch, condemned it perhaps rather harshly in the *Biologisches Zentralblatt* for 1896, p. 355, when, in speaking of Darwinism, he said: 'It is a matter of history, like the other curiosity of our century, Hegel's philosophy. Both are variations on the theme "how to take in a whole generation,"[9] and neither is very likely to give ages to come a high opinion of the latter part of our century.' In the same publication for 1902, p. 182, he says: 'For men of clear intellect, Darwinism has long been dead, and the last argument brought forward in support of it[10] is scarcely more than

[9] The translator of Fr. Wasmann's book has rather softened down the expression of Dr. Driesch. Literally translated, the passage would be: "both are variations upon the theme '*how to lead a whole generation by the nose.*'"

[10] The reference is to a paper by L. Plate in the *Verhandlungen der Deutschen Zoologischen Gesellschaft* for 1899: "Die Bedeutung und Tragweite des Darwinischen Selektionsprinzips."

a funeral oration in accordance with the principle *de mortuis nil nisi bonum,* and with an underlying conviction of the real weakness of the subject chosen for defense'" (l. c. p. 260 sq.).

Anyone desiring more information on the subject of evolution may consult Fr. Wasmann's book from which we have quoted, or Fr. Gerard's "The Old Riddle and the Newest Answer." The works of Dr. Fleischmann,[11] who was formerly an enthusiastic up-holder of evolution, contain, perhaps, the strongest condemnation of the hypothesis yet written by a scientist.

Whatever may be the merits of the hypothesis, as defended by Fr. Wasmann and others, it remains, as stated in the beginning, strictly within the limits of a scientific hypothesis. *A priori* nothing can be said against it; it is to be judged by the tests of a scientific hypothesis. But we must, in the name of science, protest against the unwarranted assumptions which have given birth to *genetic psychology. No materialistic form of the evolutionary hypothesis has even a shadow of "evidence," palcontological or otherwise, in its favor.* And, what concerns us here more than anything

[11] *Die Descendenztheorie* von Dr. Albert Fleischmann, Leipzig, 1901. *Die Darwinische Theorie* von Dr. Albert Fleischmann, Leipzig, 1903.

else, *it is irreconcilable with experimental facts of the mental order, and is in contradiction with sound principles of philosophy.* This we intend to show in the course of our subsequent discussion in which we shall consider both *the bulwark* of materialism and its many *stumbling-blocks.*

Chapter II

A Guide to the Subsequent Discussion

THE question which we propose to answer is, whether or not man has a *soul,* and what evidence there is to prove its existence. Before answering the question we must agree on some *nominal definition* of the subject under discussion. By *"soul"* we understand for the present nothing else than *"the last source of mental activities."* In the term "mental activities" we include not only rational thought and volition but also cognitions and desires of the sensitive order. Thus our provisional and merely nominal definition of the soul is, *"the last source of thinking, feeling and willing."* By experience we know that we think, feel and will. Thinking, feeling and willing must proceed from something, whatever be the nature and properties of this "something"; and this "something," the last ground and source whence thinking, feeling and willing proceed, we call *soul.*

A Plea Against Prohibition in Philosophy.

Some people take offense at names. It was reported in the newspapers some time ago that in a certain town which had "run dry," alcoholic drinks — of course — became a by-name for abomination; but a certain kind of pie became very popular. In fact everybody liked it and asked for it. A prohibition wave has also swept over philosophy. "*Agnosticism,*" the philosophy of the "*ignoramus et ignorabimus,*" is nothing but a plea for prohibition in philosophy. We have seen how carefully Prof. Titchener avoids the irritatingly unscientific term *soul* in his article on "Psychology." Even where he means to deny its existence, he uses the euphonic circumlocution "mind, as popularly understood." To spare modern psychologists the shock, we may, for that matter, also use the term *mind* instead of *soul,* as long as we mean one and the same thing, namely, *the last source of mental activity,* whatever be its nature and properties.[1]

So far then, we are on common ground with the opponents of the scholastic doctrine as far

[1] We may also adopt the provisional definition of "mind" as used by Prof. Titchener in his Outlines of Psychology. "My 'mind' is that in me which thinks, understands, reasons, chooses, directs my actions" (l. c. p. 6).

as realities are concerned, even though we use different names for denoting the same thing. Even James does not see why prohibition should be carried further. He says:

"If the word Soul could be taken to mean merely some such vague problematic ground, it would be unobjectionable." (Pr. of Psych. Vol. I, p. 350.)

Now for the present we really mean no more than this. However, we do not stop here, but proceed to prove some *essential attributes* of the soul, and here our real discussion begins. The attributes to which James and all materialists object, are mainly three: the soul's *substantiality*, its *simplicity*, its *spirituality*. Our question, then, concerning the existence of the soul, breaks up naturally into three distinct questions, which we shall try to answer in turn.

The Three Questions to be Answered.

FIRST QUESTION: Is the last source of mental activity a *substantial* being or is the soul only a collective name for the aggregate of successive mental states or "bits of consciousness"? We answer that the last source of mental activity must of necessity be something substantial. This we shall show in

chapter III, in which we attack the *proton pseudos* of modern psychology, the denial of a substantial subject of thought. It may be well to add here by way of caution or apology, that this chapter will prove a very strange one to readers not accustomed to modern psychological discussions. Its full significance will dawn upon the reader only in the course of the last chapters of this book.

SECOND QUESTION: Is this substantial source of thought distinct from the body, and in particular from the brain, or is the brain itself the last source of mental activity? Before proposing and substantiating our own answer to this question, we shall give the most careful attention to the answer given by materialists. This we shall do in chapter IV, in which we shall examine *the bulwark of modern materialism, the recent advances in physiology.* After considering the "evidences" of materialism our verdict will be: *Not proven;* for the most recent advances in physiology may be readily reconciled with the doctrine of the scholastics.

In chapter V we shall begin to explain the evidences of scholastic philosophy in support of the doctrine that the brain cannot be the

last source of mental phenomena. We shall consider the argument drawn from the *perception of personal identity*, which constitutes *the first stumbling block of materialism*. Thus we establish the second attribute of the human soul, its *simplicity*.

THIRD QUESTION: Is the soul of man, though distinct from the brain, intrinsically dependent upon the body, so that it can neither *exist* nor exercise *any function* except in conjunction with the body? In other words, are *all* the functions of the soul *organic* functions and hence is the soul itself a *material* being? We answer that *rational thought*, when carefully analyzed, reveals itself as a mental function essentially superior to sense perception. For the acts of rational thought are spiritual functions; hence their last source and subject must be a spiritual substance. The fact then that we are capable of *rational thought* constitutes *the second stumbling block of materialism*, which will engage our attention in chapter VI. A fuller explanation of the terms involved in this question will be found in the beginning of this chapter.

In the remaining two chapters, VII and VIII, we shall continue the same subject by

considering the *third and fourth stumbling blocks of materialism, perfect psychological reflexion and free will.*

The Credentials of Rational Psychology. A Preliminary Question.

Before proceeding, however, to discuss these three questions which are proper to *rational psychology,* it may be well to settle a preliminary question, namely, whether such discussions have a rightful place in human sciences. In other words, we must premise a few remarks on the nature, method and credentials of rational psychology, as well as on *its relation to empirical psychology.*

It is frequently stated that rational psychology, in contradistinction to empirical psychology, proceeds "*a priori,*" and that hence it has no title to the name of "science." To this we answer, that the method of rational psychology is not "*a priori*" in the sense that it discards empirical inquiry. (In passing be it stated that this was never the meaning of *a priori* method or argument, as understood by the scholastics; but of that the writer has said enough in his lectures on Free Will.) For instance, in settling the above three questions,

we argue from mental phenomena, *as experience reveals them to us.* Of course we suppose, and make use of, those metaphysical principles without which even experimental sciences are impossible, the principle of causality, of sufficient reason, etc., etc. This being understood, we most emphatically deny the oft repeated statement that psychology was no science before it reached the experimental stage. "Science" in the time-honored terminology of the scholastics means knowledge of things from their *causes.* The term "cause" in this definition is taken not only as denoting the efficient cause, but in its broadest meaning, as denoting anything that answers the questions, *what* a thing is, *whence* it is, *for what* it is. All these questions, so natural to our rational nature, empirical sciences likewise try to answer, although they do not proceed to the ultimate causes, as philosophy professes to do.

The Restricted Meaning of the Term Science.

Of course rational psychology is not a "science" in the restricted sense which the term now bears. Prof. Titchener says in the article, several times referred to:

"The term science is not usually applied to any body of knowledge until it is has reached the stage of experiment."

As long as it is only a question of terminology, we do not object to this restricted meaning of the term "science," and we are satisfied that in this sense rational psychology is not a "science." But back of this is the error of positivism, which allows no source of human knowledge other than experience and, in particular, experiment. If this position were really true, then even the experimental sciences would be impossible. For Prof. Titchener says with perfect correctness:

"The term science, in its strictest sense, is reserved for *explanatory knowledge:* the observations must not only be accurate, must not only fall into *groups,* under *general laws,* and thus render it possible to *predict the outcome of new observations,* but must also be *linked with and referred to their own causes* or conditions in the world at large."

This is true; but without general principles it is quite impossible to reduce phenomena of nature to any laws, and equally impossible to inquire into the causes of things. Now such general principles are necessarily metaphysical in nature. If, then, the validity of such general knowledge is admitted, or in other words,

if the use of metaphysics is allowed in this restricted sense, then the fundamental assumption of positivism is false.

To put the matter differently. In order to "group" observations, to discover their "general laws," and to "render it possible to predict the outcome of new observations," there surely is need of the experimental and *inductive* method. But if *deduction* is discarded as impossible and valueless, then the very possibility of *induction* must be denied. For the fact is, that then there is nothing to warrant our generalizations of experiences; for there is nothing on which induction rests. Hence it is that more than one modern scientist has despaired of explaining how it is that we can lawfully come to such generalizations, i. e., to general laws of nature. The following passage from the address of A. J. Balfour, President of the British Association for the Advancement of Sciences, is an unmistakable declaration of bankruptcy. He says:

"The more imposing seems the scheme of what we know, the more difficult it is to discover *by what ultimate criteria we claim to know it*" (Science, Vol. XX, Aug., 1904, p. 266).

A glance at the article "*Induktion*" in Eis-

ler's Philosophic Dictionary will reveal the fact that modern philosophers are hopelessly embarrassed when discussing the basic principle of induction. Many of them by their proposed solutions of the problem but emphasize or explicitly reiterate the doubts mooted by the father of modern Skepticism, who insisted

"that it is not reasoning which engages us to suppose the past resembling the future, and to expect similar effects from causes, which are, to appearance, similar" (Hume, Enq. sct. iv, part II, p. 36). "All inferences from experience, therefore, are effects of custom, not of reasoning" (l. c. sct. v, p. 42).

According to the philosopher of "common sense," the principle of induction is

"that, in the phenomena of nature, what is to be, will probably be like to what has been in similar circumstances" (Reid, Essay on the Intell. Pow. of Man, VI, ch. 4 sq.; cf. Eisler, l. c. I, p. 572),

which is but another way of stating the propensity of the human mind to generalize its experience, admitted by Hume. John Stuart Mill, though he rightly recognized that induction is based on deduction, and can be expressed syllogistically, is far from explaining the validity of this reasoning process; for his

major premise, the principle of uniformity of nature, is itself an inductive principle, so that induction lastly rests on induction, which is returning to the subjective propensity of our mind to generalize its experiences: a declaration of bankruptcy. (Cf. J. S. Mill, A System of Logic, especially book III, ch. 3; and Eisler, l. c.)

Science, then, in its most limited sense, must make use of universal metaphysical principles, unless it is to end in a declaration of bankruptcy. These metaphysical principles must not be à la Kant; they must be valid in the sense in which they were always defended, and made use of in every branch of philosophy by the scholastics. But if they are valid and admitted as a basis for experimental inquiry, why should they be less valid in rational psychology?

But it is claimed that our knowledge of the causes of things is not to be definitely accepted until it has been verified by experiment. This is most assuredly correct, as long as we deal with the *merely tentative hypothesis,* so common in experimental sciences; but the statement as it stands *in its sweeping universality* is absurd and suicidal. If every truth is to be verified by experiment, then we

have no starting point in any scientific inquiry whatever; we are, in other words in the same predicament as those who refuse to admit anything as true unless it has been *demonstrated.* Demonstration proceeds from premises, and unless there are truths which are of themselves evident, prior to any demonstration, there can be no premises at all for any demonstration. *We must beware of trying to throw light on the sun!* The sun is the source of all light in this sublunary world; in refusing to acknowledge any light but *reflected* light, we shall have no light at all. Unless we wish to stultify ourselves, those metaphysical principles which lie at the basis of all human knowledge, must be admitted because of their intrinsic evidence, prior to any experimental verification and prior to any demonstration.

But these principles admitted, we may use them just as well for furthering our knowledge in this as in another direction, just as well for the acquisition of proximate causes of phenomena, as for that of their *ultimate causes.* Now our inquiry concerning the nature and existence of the human soul, as formulated in the above three questions, is really nothing else but an inquiry into the ultimate cause of mental phenomena. The law-

fulness of such an inquiry, then, cannot be denied without questioning the basic principles of all human knowledge. Hence if rational psychology is impossible, empirical psychology is equally impossible.

It must be remarked, however, that it is one thing to say that we can come to a certain knowledge of the soul and its essential attributes, and quite another thing to say that we can by reasoning acquire a comprehensive knowledge of the soul, and that always in positive terms. But of this we shall say more, when explaining the "analogy" of the concepts we have of spiritual things.

Again, while we claim that the discussion on the existence and nature of the soul cannot be discarded in psychology, we by no means contend that psychology has nothing else to do but to discuss the existence and nature of the soul. A glance at scholastic psychological treatises,[2] even at the "De Anima" of Aristotle, will convince anyone that such is not the case.

Further, it is not our intention to claim that experimental psychology is to be discarded, because in it discussions concerning the nature

[2] Cf. Psychology: Empirical and Rational, by Michael Maher, S. J., Longmans, Green & Co.

of the soul can well be dispensed with. Of course they can be dispensed with, since they belong not to the province of the experimental, but to that of rational psychology. But it is one thing to *dispense with such discussions* in experimental psychology and quite another to *deny* that the soul exists. In other words, while *empirical psychology* has a rightful place in human sciences, the same must be said of *rational psychology. The two sciences are complementary.*

Chapter III

The Substantiality of the Human Soul and the Proton Pseudos of Modern Psychology

WE now proceed to answer the first question concerning the soul of man; is it a *substantial* being? In modern philosophy the existence of substance and its very concept have been so violently attacked and even ridiculed, that we must needs premise a few remarks about the concept itself and its objective validity. This will of course take us back to a chapter of general metaphysics, in which the "first principles" of human thought are discussed. Our only excuse for this is that most modern errors have their roots in a perversion or at least in a misunderstanding of these same first principles. When modern philosophers wantonly play with fundamentals and delight in walking recklessly on the very verge of the abyss of idealism and absolute skepticism, we must be pardoned if, in beginning our discussion *ab ovo,* we

seem to imitate the chronicler of local events who opens his history with Adam and the creation of the world.

The Concept of Substance.

Etymologically considered, substance is that which "stands under" or supports something else, viz., accidental modifications. This etymological definition of substance, though it indicates accurately enough a property of created substances from which we gather the concept, does not, however, express the very essence of substance; for if it did, God would not be a substance, as there is nothing accidental in God which needs a support. The same remark applies to another descriptive definition of substance, viz., "the permanent subject of succeeding modifications," exemplified, for instance, by a piece of wax which — when handled — is now cold and brittle, now warm and soft, now exhibiting this, now another shape, but always remaining the same wax: the permanent subject of successive modifications.

The very essense of substance, *generically considered,* is expressed by the time-honored definition: *ens per se,* a thing existing by itself; or negatively: a thing which does *not* need a

subject of inhesion. Therefore the generic essence even of created substances is not expressed by this, that they *are,* as a matter of fact, subjects of inhesion, but by this, that they themselves do *not* need such a subject of adhesion: they "stand by themselves." In this substances are opposed to "accidents," which of their very nature call for such a subject of inhesion.

The Objective Value of the Concept.

This premised, we argue: The things of which we are aware by internal and external experience either need a subject of inhesion or they do not. If the latter, then they *are* substances; for this is what is meant by a substance. If the former, then they *suppose* a substance; for the subject itself, in which they inhere, in turn either needs an ulterior subject or not, and so on until we arrive at a substance. In either case, therefore, substance exists. In other words: If *anything* exists, substance exists. But only the universal Skeptic doubts whether anything at all exists. Therefore substance exists.

This inference is at once so obvious and stringent, that it is really astonishing how the existence of substance should have come to

be doubted at all and we wonder what could possibly be said against it. As all modern attacks on substance in general, and on the substantiality of the soul in particular, are for the most part those brought forward by Locke in his Essay concerning Human Understanding (Book II, ch. 23), improved, at best, by a few Kant-phrases (now preferably spelled with c), it may be well to examine the objections of Locke a little more closely.

Objections of Locke.

Locke, in the chapter referred to, says:

"The mind being, as I have declared, furnished with a great number of simple ideas conveyed in by the senses, as they are found in exterior things, or by reflection on its own operations, takes notice also that a certain number of these simple ideas go constantly together; which being presumed to belong to one thing, and words being suited to common apprehensions and made use of for quick dispatch, are called, so united in one subject, by one name; which, by inadvertency, we are apt afterward to talk of and consider as one simple idea, which indeed is a complication of many ideas together: because, as I have said, not imagining how these simple ideas can subsist by themselves, we accustom ourselves to suppose some subtratum wherein they do subsist, and from which they do result; which therefore we call substance.

"So that if any one will examine himself concerning his notion of pure substance in general, he will find he has no other idea of it at all, but only a supposition of he knows not what support of such qualities which are capable of producing simple ideas in us; which qualities are commonly called accidents. If any one should be asked, what is the subject wherein color or weight inheres, he would have nothing to say, but the solid extended parts; and if he were demanded what is it that solidity and extension adhere in, he would not be in a much better case than the Indian before mentioned, who, saying that the world was supported by a great elephant, was asked what the elephant rested on; to which his answer was — a great tortoise. But being again pressed to know what gave support to the broad-backed tortoise, replied — something, he knew not what. And thus here, as in all other cases where we use words without having clear and distinct ideas, we talk like children" (l. c. p. 422 sq.).

In this passage and throughout the whole chapter Locke confounds several things which it is very important to keep apart. To start with, it is one thing to say that by experience, external and internal, we get a *generic* concept of substance, and that this concept is sufficiently *clear* to distinguish substance from aught else, viz., from accidents; and quite a different thing to say that in this manner we

arrive at the knowledge concerning the *intimate nature and constitution* of those substances which come under our observation. We assert the former, not the latter. Locke dexterously confounds the two statements. This confusion runs through the whole chapter and thus a semblance of truth is given to a fundamental error in modern philosophy.

Again it is one thing to say that our *senses* are incapable of expressing the essence of substance, even generically; and quite another thing, that our *intellect* is incapable of such a representation. Locke persistently confounds the two; to him the operations of sense and intellect are one and the same thing, and both come under a general heading of "ideas." Need we wonder at the preposterous conclusions reached?

The worst, however, is that *Locke really misses the point at issue.* Whilst he pretends to hit the beast of burden, he trounces the rider. To explain. If his objections really prove anything, they prove the non-existence of *accidents,* and emphasize the reality of substance. He says, that we presume without real foundation that sensible qualities need a subject of inhesion. Suppose, then, for the sake of argument, they really need no such

subject, but subsist by themselves. In this case these very sensible qualities *are* substances; for that is what is expressed by the idea of substance. The mistake, then, of which all mankind is guilty, is not that they insist on the reality of substance, but that they inadvertently suppose the existence of accidents. In other words Locke by his objections inadvertently confirms our argument: *If anything exists, substance exists.*

After all that has been said, it is clear that Locke, like the rest of us, had most assuredly a *clear* idea of substance in general; for he expresses the same repeatedly: a thing which needs no subject of inhesion, but subsists by itself. Side by side with such clear expressions of substance, it is but a bit of oratorical claptrap, to say, as he does, that men when using the word "substance" talk like children who know not what their words imply.

The concluding remarks in the chapter referred to come as a distinct surprise: he takes his previous statements back. We read:

"To conclude. Sensation convinces us *that there are solid extended substances;* and reflection, that *there are thinking ones*" (l. c. n. 29, p. 442).

Why, this and no more do we ask Of course,

in the further explanation of this surprising admission, the confusion of ideas, above spoken of, crops up again, and this alone can excuse such an open contradiction.

The Evidence for the Substantiality of the Soul.

So much for the concept of substance in general. What about the substantiality of the Soul? It may be well at the outset to emphasize again what we have said in the last chapter. We here take the term soul in the most general and non-committal meaning as the last subject and source of thinking, willing and feeling. We do not as yet claim that this is something distinct from the brain, that it is simple and spiritual. Lest the term *soul* grate on the ears of materialists, we are, for the present, satisfied with substituting the less irritating term *"mind, as popularly understood,"* or the still more euphonious circumlocution: that which the personal pronoun "I" stands for, namely the *"ego"* or *"person."* As we stated before, in scholastic terminology these terms are not synonymous; but for the purposes of the present discussion we can safely neglect these distinctions. We claim, then, that *"mind"* or the *"ego"* is something substantial.

Thought and volition do not exist by themselves. Nor are they floating in the air; they do not come to us out of the void, but proceed from, and inhere in something. Where there is thought there is somebody that thinks. In other words thinking and willing are accidental modifications of a thinking subject. Applying the simple reasoning process which evidences the existence of substance in general, we say: this thinking subject either needs a further subject of inhesion or it does not. By the former alternative it *is* a substance; by the latter, it *supposes* a substance.[1] This substance, the *last* source and subject of mental activity, we call *soul*. Conversely, then, the soul is a substance.

There is, however, really no need of any reasoning process of any kind, to evidence the substantiality of the soul, if we take the term *soul* in the most non-committal sense, as synonymous with *mind* or *ego*. For the substantiality of the thinking subject is attested by direct internal experience.

[1] Prof. Höfler (Psychologie, 1897, Wien und Prag, p. 48 sq., note) points out the inconsistency of Wundt and Paulsen in that they admit the reality of substance in the *physical* world but deny the applicability of the concept to *psychical* phenomena. At any rate they should not take umbrage at the substantiality of the soul, if the latter term is understood in the non-committal sense in which we use it in this chapter.

By the testimony of consciousness I am aware, not only of thinking and willing, but also of the *ego* which is the subject of my thinking and willing. Consciousness attests unmistakably that "I" am thinking, "I" am willing. With such irresistible evidence is my own *ego* forced upon me as the centre and source of all my conscious states, that even Descartes in his breaking-down process of all that the sages of old had held sacred, could not possibly divest himself of this truth, though he preposterously expressed it by the famous enthymeme: "I think; therefore I am." I say, he preposterously expressed it by this enthymeme; for the existence of *ego* is expressed in the very premise from which he deduces it. Every experience of ours involves the perception of the *ego* which is the subject of this experience.

The Proton Pseudos of Modern Psychology.

But psychology, if it is to be a scientific psychology, cannot recognize this truth, as we have heard Prof. Titchener state. And he voices only the general trend of thought among modern psychologists.[2] The datum of scien-

[2] It would be easy to multiply references to modern psychological works. The following passage from "The Soul of Man" by Dr. Paul Carus (Chicago, 1891), p. 31 sq., may find a

tific psychology is: Thought processes are going on in the world. Scientific psychology demands that mental phenomena be expressed impersonally much as we say, for instance, *it rains.* And why must this be the datum of scientific psychology? Why can it not recognize the substantial principle of thought? The reason, we are told, is because the object of scientific psychology is "mind, not as popularly understood, but *mind accessible to experiment.*" Prof. Titchener, however, forgets that mind is really not accessible to experiment except as a substantial principle of thought, expressed by the personal pronoun "I." For no mental fact can be observed even superficially, and still less be subjected to experimental research, except by means of introspection or internal experience. Every act of introspection reveals the substantial subject of conscious states, the *ego;* nay more: no internal experience can be expressed without expressing the *ego.* This is so true, that even

place here. Under the subheading: "The *subject-superstition* and Agnosticism" Dr. Carus writes: "The name 'subject' is based upon a misconception. Subject means 'that which underlies.' . . . The subject was supposed to produce the states of consciousness, while in fact (as we have explained above) *it is exactly the opposite.* Feelings change into mind, they produce the subject which thinks. *The subject is nothing underlying but rather overlying.*" Modern psychology, then, requires a very radical change in our notions.

Prof. Titchener himself in his supreme effort to eliminate the *ego* from the expression of internal experiences in that specimen of scientific language which engaged our attention in the first chapter ("Mind splits up into consciousnesses, the breakfast - consciousness, the newspaper-and-correspondence-consciousness, etc.") was obliged to prefix the *ego* of antediluvian days in the shape of the *pluralis majestaticus:* "To put the matter crudely, WE begin the day with a getting-up consciousness. . . ." We must agree with Prof. Titchener, that this is putting the matter *crudely,* in fact, *very crudely,* if indeed the personal pronoun must needs be excluded from the terminology of scientific psychology.[3]

For the very reason, then, that the object of experimental psychology is "mind, as accessible to experiment," we must recognize a substantial principle of thought. Scientific psychology, in denying this at the outset of its work, commits a suicidal blunder, pointed out even by Lotze who otherwise is not prepossessed in favor of scholastic philosophy. He says:

[3] This is also emphasized by Prof. Jodl (Lehrbuch der Psych., ed. 2, Vol. I, p. 110 sq.). His further explanations, however, show that Jodl is far from advocating the scholastic doctrine. Cf. also l. c. pp. 67, 86 sq.

"It has been required of any theory which starts without presuppositions and from the basis of experience, that in the beginning it should speak only of sensations or ideas, without mentioning the soul to which, it is said, we hasten without justification to ascribe them. I should maintain, on the contrary, that such a mode of setting out involves a wilful departure from that *which is actually given in experience.* A mere sensation without a subject is nowhere to be met with as a fact. It is impossible to speak of a bare movement without thinking of the mass whose movement it is; and it is just as impossible to conceive a sensation existing without the accompanying idea of that which has it,— or, rather, of that which feels it; for this also is included in the given fact of experience, that the relation of the feeling subject to its feeling, whatever its other characteristics may be, is in any case something different from the relation of the moved element to its movement. It is thus, and thus only, that the sensation is a given fact; and we have no right to abstract from its relation to its subject because this relation is puzzling, and because we wish to obtain a starting-point which looks more convenient but is utterly unwarranted by experience" (Metaphysic, n. 241, ed. 2 (1887), Vol. II, p. 169).[4]

We said above that internal experiences cannot be even expressed without using the personal pronoun "I" or some other term denot-

[4] Cf. also Putnam (A Text-book of Psychology, p. 11), who expresses himself to the same effect.

ing the substantial subject of thought. Nay more, we cannot express even the ultra-idealistic view concerning anything in the realm of internal and external experience, except by branding it as a merely "*subjective*" or "*mental*" phenomenon. Thus, though we avoid the painfully unscientific nouns and personal pronouns, the substantial subject of thought is just as clearly expressed by the more euphonious adjectives.

In the Old Rut Again.

It is amusing to see how Prof. Titchener in his Primer of Psychology tries to make it clear to his readers that the terms "mind" and "mental" involve nothing substantial. He says:

"The psychologist does not think it true that they (the thoughts) are 'done by' the mind or are the 'workings' of the mind,— that the mind is something separate from them. He believes that they *are* the mind; that the *mind is just the sum of them all:* so that when he says 'mind' he is simply using a sort of shorthand phrase for 'all my thoughts and feelings'" (l. c. p. 5).

The reader will notice that the little word "*my*" has slipped into this shorthand phrase for mind: "All *my* thoughts and feelings;"

but we are not as yet at the end of Prof. Titchener's explanation. He grants that it is a little difficult at first to understand the scientific use of the popular term (p. 6). Accordingly he goes on to explain the difference between "*things*" and "*processes*" and then says:

"Psychology is a science that treats exclusively of matters of the second sort, i. e., *of processes* . . . the objects of 'mental science' are mental processes" (p. 7).

Mental processes are explained as processes, that go on "*inside of us*" (p. 9). Of course the unavoidable personal pronoun "*us*" has slipped also into this further explanation. Besides, there are other processes going on "*inside of us*" which are not "*mental*," as for instance the process of *digestion*. The difference between mental and other processes cannot, therefore, be merely a difference between *inside* and *outside*, as the Cornell Professor himself remarks (p. 9). What then are the characteristics that make a process within the body a mental process?

"This (he answers) is a question that has been answered in a great many ways. The simplest answer to it, perhaps, is this. A mental process is a

process which can form part of the experience of *one person* only; the processes dealt with by other sciences can form part of everybody's experience. Not only does the mental process go on inside of you; it is *so entirely inside of you* that YOU are the only PERSON who can ever get at it and observe it" (p. 10).

We have capitalized the terms "YOU" and "PERSON" in this final scientific explanation of "mind," just to let the reader know that Prof. Titchener after his supreme efforts to efface every trace of the substantial *ego* and *person,* finds himself at last in the old unscientific rut again.[5] It seems to be the "*tragic story*" over again of

"one who took it much to heart that his pig-tail hung behind him. He turned to the right, turned

[5] Lichtenberg finds himself in the same predicament. He is — to the writer's knowledge — the only German psychologist who suggests "*it thinks*" ("es denkt") as the best formula for expressing our internal experiences. He says: "*Es denkt,* sollte man sagen, so wie man sagt, *es blitzt.* Zu sagen *cogito* ist schon zu viel, sobald man es durch: *ich* denke übersetzt." Explaining this formula further he says: "Wir werden uns gewisser Vorstellungen bewusst, die nicht von uns abhängen, andere, glauben wir wenigstens, hiengen von uns ab; wo ist die Grenze?" Prof. Höfler adds the following by way of comment: "man beachte, dass auch hier gerade die bekämpften Begriffe '*wir . . . uns . . . bewusst*' nicht vermieden sind oder werden können — oder ist ein solcher Verzicht nur aus sprachlichen Gründen möglich?" (Höfler, Psychologie, p. 378 sq.).

There is a little story which Prof. Höfler tells in this connection and which deserves to find a place here. "Ein kleiner Knabe wurde gefragt: Warum heulst du so? Er schluchzte: 'Hu, hu, *es heult von selber*'" (l. c.). That boy certainly had the scientific instinct of a modern psychologist.

to the left —: his pig-tail hung behind him. He whirled around like a merry top,— do what he might: his pig-tail hung behind him. E'en to this day, though he keeps ever turning, and though it is his bitter grief: *his pig-tail hangs behind him.*" [6]

That terms denoting the substantial subject of thought are hopelessly unavoidable, Prof. Titchener and his colleagues know just as well as we do, and, except for a few *very* scientific passages, they use them just as freely as the rest of us. Some in fact are not even ashamed to do worse than that; they use not only the melodious Greek term "*psychic,*" but, after due apology for using an unbecoming word, they blurt out the Anglo-Saxon "*soul*" and "*Seele.*" We wonder what apology they can offer for such an inconsistency?

Prof. Wundt's Apology.

Prof. Wundt, lamenting this very fact, points out in excuse, that language was coined before the advent of scientific psychology (and we thank heaven that it was); hence he insists, that "scientific" psychology should not be held responsible for such unavoidable unscientific terms. We quote Prof. Titchener's translation:

[6] A rather free version of Chamisso's "Tragische Geschichte."

"In all departments of human experience, there are certain concepts that science finds ready made, before it proceeds upon its own proper business,—results of that primitive reflection which has left its permanent record in the concept-system of language. . . . 'Mind,' 'intellect,' 'reason,' 'understanding,' etc., are . . . concepts that existed before the advent of any scientific psychology. . . . We are declining once for all to read into the concept of 'mind' a meaning that the naïve linguistic consciousness always attaches to it. Mind, in popular thought, is not simply a subject in the logical sense, but a substance, a real being; and the various 'activities of mind,' as they are termed, are its modes of expression or action. But there is here involved a metaphysical presupposition, which Psychology may possibly be led to honor at the conclusion of her work, but which she cannot on any account accept, untested, before she has entered upon it. Moreover, it is not true of this assumption as it was of the discrimination of internal experience at large, that it is necessary for the starting of the investigation. The words coined by language to symbolize certain groups of experiences still bear upon them marks which show that, in their primitive meanings, they stood not merely for separate modes of existence, for "substances," in general, but actually for personal beings. This personification of substances has left its most indelible trace in the concept of genus. Now the word-symbols of conceptual ideas have passed so long from hand to hand in the service of the understanding, that they have gradually lost all such

fanciful reference. There are many cases in which we have seen the end, not only of the personification of substances, but even of the substantializing of concepts. But we are not called upon, on that account, to dispense with the use whether of the concepts themselves or of the words that designate them. We speak of virtue, honor, reason; but our thought does not translate any one of these concepts into a substance. They have ceased to be metaphysical substances, and have become logical subjects. In the same way, then, we shall consider mind, for the time being, simply as the logical subject of internal experience. Such a view follows directly from the mode of concept-formation employed by language, except that it is freed of all those accretions of crude metaphysics which invariably attach to concepts in their making by the naïve consciousness" (Wundt, Princ. of Phys. Psych., Vol. I, pp. 17, 18).[7]

Positivism and Crude Metaphysics.

Such, then, is the apology of Prof. Wundt, but it is an apology which aggravates his case. It is most assuredly true that in all departments of human knowledge there are certain concepts and truths which science and philosophy find ready-made, before they proceed upon their own business. But to brand them indiscriminately "naïve" and "results of that

[7] Ebbinghaus (Psych., p. 17) offers a similar apology; also Höfler (Psych., p. 14).

primitive reflection" which the scientist "cannot on any account accept" before he has tested them by experiment, is suicidal: it is the old error of empiricism and positivism, which lies at the root of all modern skepticism. Every science must recognize some fundamental truths which on account of their own intrinsic, immediate and overwhelming evidence are within the reach of every man and afford the starting-point for all sciences.

Now one of the most fundamental truths is the reality of the thinking subject, which, to use the words of Prof. Ladd (El. of Phys. Psych., p. 3), "all language as expressive of universal experience necessarily recognizes." And it is well to emphasize what Prof. Wundt rightly remarks, that "mind, in popular thought, is not simply a subject in a logical sense, but a substance, a real being." As to those "accretions of crude metaphysics" which attach to this term and from which "scientific" language has freed itself, we most emphatically reject such insinuations. The "metaphysics of the schoolmen" were ever free from such accretions. Scholastics have never confounded mere logical subjects (subjectum attributionis) with subjects of inhesion (subjectum inhaesionis) and still less with

"personal beings"; they have never mistaken abstract ideas, which represent their object "after the manner of something subsisting by itself," for real substances; they were never guilty of translating concepts like "virtue, honor, reason" into substances not even "metaphysical" ones, whatever that is supposed to mean; they have never adopted the view of exaggerated realism, which would make real subsisting beings of universal concepts as genus and species. In fact it is hard to prove that there was ever anyone in the history of philosophy, who was really guilty of such an error: Plato and William de Champeaux, who generally have to shoulder the accusation, were probably as innocent as the rest of us. Not only was the scholastic doctrine free from all such "accretions of crude metaphysics," but it is only fair to state, that language as commonly understood by people of "pre-scientific" days, and for that matter, by the vast majority of men in our era of science, does not imply such blunders. If "accretions of crude metaphysics" are desired they can be found in "scientific" treatises, viz., in those portions of them, in which "scientists" begin to dogmatize.

A Plea for Common Sense.

This one thing, however, is overwhelmingly clear from the apology of Prof. Wundt, namely that "scientific" psychology at the very beginning of its work puts itself in opposition to *common sense,* nay more, *it makes an open profession of doing so.* Prof. James only parenthetically remarks, that this is no insuperable difficulty in philosophy (Pr. of Psych. I., p. 304). Now "common sense" is most assuredly no *universal* criterion of truth, in fact it is no criterion at all in questions which cannot be solved without further research and speculation. But not everything can be the object of further research; for then research itself would have no starting-point. When, therefore, common sense remains within the range of its jurisdiction, its verdict cannot be doubted without jeopardizing all knowledge. In vindicating the rights of "common sense" in philosophy and science, we wish it distinctly understood that we do not mean that *blind instinct* which Reid appealed to. For "common sense" is nothing else but the intellect of man, in as far as it perceives and judges in matters which are obvious and necessary for human life, and in which it is

guided by *overwhelming objective evidence.* In other words "common sense" is not a criterion or source, distinct from the five sources usually enumerated in Critical Logic, namely, internal and external experience, comparison of ideas with or without a middle term, and historic testimony. "Common sense" is concerned with the easy portions of all five sources, necessary for human life, and always backed up by such an overwhelming flood of light, *objective evidence,* that no man, not even the "scientist" can deny his assent to its verdicts, notwithstanding all his asseverations to the contrary.

If "common sense," so understood, is subject to error, then we must give up philosophizing altogether: *we dare not question the rightful verdicts of common sense.* Now this is what "Psychology without a Soul" does and openly professes to do. It has, then, really no starting-point for its work, notwithstanding the dogmatic asseveration of Prof. Wundt to the contrary. For, as we have said above, and as Prof. Wundt himself admits, experimental psychology cannot do its work without relying on internal experience, without introspection; no mental fact can be observed without it; "mind" is not "accessible to

experiment" without it. But every act of introspection or internal experience reveals the subject, the substantial principle of thought. Internal experience knows of no mental fact except in conjunction with this substantial principle of thought. "Scientific" psychologists, then, in denying this truth, cut the branch on which they are sitting.

The Writer's Apology for Inserting this Chapter.

The writer feels that he must offer an apology for inserting this rather lengthy chapter. For after all what have we proved? No more than the substantiality of the thinking subject, and if we have termed this subject "soul," we have — in this chapter — taken the term in a so non-committal meaning that even the ultra-materialist need not dread it. But this is a mere trifle. Why so much ado about this grain of truth! In apology, then, we offer the following:

Readers, acquainted with modern philosophical literature, know the prominence given to such discussions, especially in works on psychology. They will realize, therefore, that it would be useless to try to proceed before examining these fundamental principles. James in his Principles of Psychology, a

standard reference-book in this country, devotes more than 200 octavo pages to the perception of "Self" and pretends to have destructively criticized the claims of common sense in this matter. The few pages we have devoted to the vindication of the "common sense view," must then seem pardonable, though we had to wade through some "scientific" statements that are abstruse.

This, however, is not the only reason which we can offer in apology. True, so far not much is accomplished in our study of the soul, and "scientific" psychologists will not grant even that little. But the result of our work will stand us in good stead in our subsequent chapters. When we proceed to prove that the subject of thought is not the brain, not the body, but something distinct from it, we clinch the argument against materialism and reap the fruits of the rather dreary discussion in this chapter.

Chapter IV

The Simplicity of the Human Soul and the Recent Advances in Physiology: the Bulwark of Materialism

THE last subject of thinking, feeling and willing, then, is a substantial being. Now for the second and more important question: Is this substantial principle of mental activity identical with the brain and the whole nervous system, or something distinct from it? Prof. Maudsley voices the attitude of modern psychologists when he says:

"The habit of viewing mind as an intangible entity or incorporeal essence, which science inherited from theology, prevented men from subjecting its phenomena to the same method of investigation as other natural phenomena. . . . Matters are happily changed now. On all hands it is admitted that the manifestations of mind take place through the nervous system. . . . Still, it is all too true that, notwithstanding we know much, and are day by day learning more, of the physiology of the nervous system, we are only on the threshold of the study of it as an instrument subserving mental function. *We know little more positively than that*

it has such function; we know nothing whatever of the physics and of the chemistry of thought" (Body and Mind, New York, 1871, p. 12 sq.).

As modern psychologists are so positive that manifestations of mind are functions of the nervous system, it is well for us to examine some of the great discoveries of science which have brought this truth to light.

"Mens Sana in Corpore Sano."

That mental activity — even the highest manifestations of mind in man — are in some way connected with our bodily organism and in particular with the brain, is evident to all of us previously to all physiological and philosophical enquiry. Vigorous mental activity entails tiring of the brain. Everyone knows that a blow on the head may arrest the operations of memory and may even result in insanity. These and similar observations suffice to evince the connection of our mental life with the functions of the body, whatever the nature of this connection may be; and this truth has been expressed from times immemorial in all languages. The Romans crystallized the truth in the adage, coined by, or at least embodied in, the writings of Juvenal: "Mens sana in corpore sano" (Sat. 10; 356); and in English

we put the matter even more bluntly by making intellectual work and "brain-work" synonymous. Whether this be only one of those figures of speech with which every language abounds, or whether it is to be literally understood, will be the subject of our enquiry in this and subsequent chapters.

It is well, then, to emphasize the fact that recent physiological discoveries have not *revealed* the connection between *body* and *mind;* for in its essential features Aristotle [1] and all schoolmen long ago stated and discussed this truth. We single out a passage from Suarez, because it is of him that Huxley sneeringly remarks that he plucked the heart out of his works during a summer afternoon's study in the library of a Scotch University (cf. Windle, What is Life, p. 140). In his commentary on "de Anima" of Aristotle Suarez says:

"*The true doctrine is proved by various experiments.* . . . The beginning and root of sensation resides in the brain, which communicates the perception to the outer senses. This is especially proved by experience. For *firstly* it is certain from anatomy, that those nerves which are the channels through which the animal spirits are administered,

[1] The fact that Aristotle made the heart the organ of internal sensation, does not alter the main point at issue: the dependence of mental activity on the *body*.

start from the brain. *Secondly* it is a fact, that in consequence of brain lesion an animal is deprived of sensation and motion, because then the faculty is injured; this, therefore, is a sign that the seat of the faculty is in the brain. *Thirdly* in case of some disease or defect of a sensitive faculty, as when the imagination is disturbed, remedies are applied to the head, not to the heart, as Galenus wisely observes in his 3 book de locis patientibus, c. 4, which indicates that the respective faculty resides in the brain. *Fourthly* in case of very strenuous attention the head, not the heart, suffers fatigue and pain; in the head, therefore, resides the principle of the sensatory faculty. *Fifthly,* the interior sense resides in the brain, as we shall state later on and as is clear from experience, since we know that the images of things are formed in the head; therefore, there also is the first root of this faculty. *Sixthly,* sleep is the privation of the action of the primary sensorium; sleep, however, originates in the head, for the heart in no wise ceases from its activity on account of sleep, as is also shown by Aristotle himself in the last chapter of his book on Respiration. *Seventhly,* the brain is situated in a high place, to be able to exert its influence over all senses; in the brain, therefore, resides the sublime faculty and first root of the whole body. But it is to be noted that there are in the brain besides the substance called medulla, membranes and nerves which originate in the substance itself; the faculty, however, resides primarily in the substance, the other parts serve for its conservation and nutrition according to Galenus 7, de

Placitis. In this connection cf. Valles 2, Controversies, c. 13" (Suarez, de Anima, l. 3, c. 13, n. 4).

In emphasizing the fact that the scholastics have known and discussed the connection between *body* and *mind,* we do not mean to belittle the real advances made on their knowledge by modern physiologists; but we insist that these advances and discoveries are concerned only with the details of a fact which was known from times immemorial. More than this, we assert that the newer knowledge contributed by recent scientific discoveries is of little or no value in elucidating the subject matter of psychology. For, as is but fitting, we must insist that this newer knowledge be freed from those accretions of mere hypotheses warranted only by the preconceived ideas of the materialist, and from the dogmatic pronunciamentos of the "scientist." We have heard Prof. Maudsley state at the outset of his discussion that "we know little more positively, than that it (the nervous system) has such function; we know nothing whatever of the physics and of the chemistry of thought" (l. c.). We really wonder why it is that modern science has given a materialistic interpretation to a fact known from times immemorial.

The Discovery of the Reflex Mechanism.

There is probably no discovery of modern physiology which is oftener referred to in this connection than that of the *reflex mechanism*. Prof. James in his *Principles of Psychology*, after an introductory chapter on the scope of psychology begins his study of mind with the reflex mechanism; and it forms the foundation not only of the chapters immediately following, but of the whole work.[2] Prof. Wundt gives even more prominence to the subject. Prof. Maudsley claims that its study has "*subtracted no small proportion from what we are in the habit of comprising vaguely under mind.*" He claims that the knowledge thus gained will help us to interpret mental functions of a higher and even the highest order (p. 24). If the study of the reflex mechanism can really do so much, we must needs examine this discovery of modern physiology, although many readers may wonder at first what con-

[2] It enters even into the discussion of the experimental evidence for *free will*. We read: "Where there is effort just as where there is none, the ideas themselves which furnish the matter of deliberation are brought before the mind by *the machinery of association*. And this machinery is essentially *a system of arcs and paths, a reflex system* whether effort be amongst its incidents or not. *The reflex way is, after all, the universal way of conceiving the business*" (Pr. of Psych. II, p. 575).

nection this discovery may have with the subject under discussion.

What Decapitated Frogs Can Do.

The stock example, illustrating the reflex mechanism, is that of the "decapitated frog," well known to every student of physiology. As the facts, and especially the materialistic conclusions based on them, are put more succinctly by Prof. Maudsley in his Gulstonian lectures on "*body and mind*," than in the more pretentious works of James and Wundt, we quote from Maudsley.

"It is well known that, if the hind-foot of a frog that has its head cut off be pinched, it is withdrawn from the irritation. The stimulus to the afferent nerve reaches the grey matter of the *spinal cord,* and sets free a force which excites to action the corresponding motor nerves of the same side. When the foot is pinched more strongly, the force liberated by the stimulus passes across the cord to the motor nerves of the opposite side, and there is a simultaneous withdrawal of both limbs; and, if the excitation be stronger still, there is a wider irradiation of the effects of the stimulus in the grey matter, and a movement of all four limbs follows, the frog jumping away. . . .

"But the experiment on the frog may be made more striking and instructive. Touch with acetic acid the thigh of a *decapitated frog* over the inter-

nal condyle, and the animal rubs it off with the dorsal surface of the foot of the same side; cut off the foot, and apply the acid to the same spot, and the animal tries to get at it again with its foot, but, of course, having lost it, cannot. After some fruitless efforts, therefore, it gives up trying in that way, seems restless, as though, says Pflueger, it was seeking some other way; and at last it makes use of the foot of the other leg, and succeeds in rubbing off the acid . . ." (l. c. pp. 15, 16).

What Frogs Can Do for Psychology.

Now what do these facts teach us? They teach that it is unlawful to conclude indiscriminately from the purposive character of external actions to intelligence *on the part of the agent* which performs such external actions. Else we should have to ascribe intelligence to our stomach and kidneys, to the green leaves of a plant and even to a watch. This is a truth which has been inculcated time and again by scholastics when discussing the *telcological* aspect of nature. The facts, however, do not warrant the conclusion that frogs and animals in general are *automata,* mere nerve-muscle machines, which in none of their external actions are guided by any cognition of any kind. Such a conclusion would far exceed the premises. But, what concerns us here most of

all, the facts teach us absolutely nothing concerning the *nature of the internal acts of the mind* by which we undoubtedly control many of our bodily movements. The pranks of decapitated frogs, then, though very interesting and of the utmost importance for physiological inquiry, so far have done nothing and can do nothing towards elucidating the subject matter of psychology.

Reflex Movements in Man.

It may be well to add here that similar reflex movements may be elicited in man when he is in deep sleep or during the complete unconsciousness produced by anæsthetics such as chloroform or ether. Even whilst we are fully conscious, many of our bodily movements — such as the acts of swallowing, coughing, sneezing, winking of the eyelids, etc.,— though very purposive in character, are as a rule reflexes. They are regulated by the nervous centres of our spinal cord, some by centres in the brain, an impulse resulting from an external stimulus (v. g. a pinch of snuff) being transmitted from the periphery by afferent nerves to these centres and thence automatically reflected by the path of efferent nerves to the muscles which in consequence

contract. In fact modern physiological research has shown that our spinal cord — if we except the nervous tracts leading to and from the brain,— consists entirely of such complex connections between afferent and efferent nerves constituting the nervous mechanism through which bodily movements both voluntary and involuntary are executed.

More than this. As Prof. Maudsley goes on to show, many of our external actions, originally performed *voluntarily*, may by frequent repetition become *reflexes*.[3] This phenomenon is, practically at least, well known to every artist and practitioner of a handicraft. An instance in point is a piano player who after much practice is able to perform automatically a number of most complicated movements which, when a beginner, he could not have performed even with the greatest attention and care. Though not expressed in terms of modern physiology, this fact too has always been known by the scholastics and was classed by them under the heading of *voluntarium virtuale* or *habituale*, as the case may be, in opposition to *voluntarium actuale*.

But here again we must insist, that the facts

[3] Such reflexes are sometimes designated "secondary" or "semi-reflexes."

of the *reflex mechanism,* though so much stress is put upon them, have nothing whatever to do with the question we are discussing. For, as stated above, we are concerned exclusively with the *internal* acts of cognition and volition, not with *external bodily* movements which under ordinary circumstances are the manifestations of the internal acts of cognition and volition.

"Ideo-Motor Actions."

But Prof. Maudsley goes a step further. He says:

"The automatic acts, whether primary or secondary, in the frog or in the man, which are excited by the suitable external stimulus, may also be excited by *an act of will,* by an impulse coming downward from the brain. When this happens, it should be clearly apprehended that the immediate agency of the movements is the same; it is in the motor centres of the spinal cord; the will does not and cannot act upon the nerve-fibres of each muscle individually, but simply gives the order which sets in motion the organized machinery of the movements in the proper motor centres. This is a consideration of the utmost importance, for it exhibits how great a part of our voluntary acts is really the automatic action of the spinal cord. The same movements are effected by the same agency in answer to different stimuli — in the one case to an

external stimulus, in the other case to an impulse of will; in both cases the mind is alike ignorant of the immediate agency by which they are done. But while the automatic acts take place independently of will, the will is absolutely dependent on the organized experience in the cord for the accomplishment of its acts; without this it would be impotent to do a voluntary act. When, therefore, we have taken out of a voluntary act the large part which is due to the automatic agency of the motor centres, *it clearly appears that we have subtracted no small proportion from what we are in the habit of comprising vaguely under mind.* We perceive, indeed, how indispensable an exact and faithful observation of the functions of the spinal cord is to a true physiological inquiry into mind, and *what an important means of analysis a knowledge of them yields us"* (l. c. p. 19 sq.).

Missing the Point at Issue Again.

Once again we must insist that Prof. Maudsley badly misses the principal point at issue in the study of mental phenomena. For at best these facts teach us what apparatus the mind uses in controlling the *external* bodily movements, and leave the nature of the *internal* acts themselves as much shrouded in mystery as it was before. Not only is the *nature* of the internal acts *not* explained by these facts, but they do not explain even the control exercised by the

mind on the bodily organs. An "impulse coming from the will" in man, and by which the "system of arcs and paths" is set in operation, is something altogether different from an "impulse coming from without" in the form of, for instance, an electrical stimulation. For it is a well known fact, that such external stimulation can be carried so far as to "tire out" the muscle, so that it does not respond to a further stimulus. And the surprising fact is that the muscle thus tired out will respond immediately to an "impulse from the will." Nor is this all; for, conversely, a muscle may be "tired out" by voluntary contractions, and it will contract immediately when stimulated from without, as for instance by an electrical current: clear evidence that the "impulse from the will" and "the impulse from without" are by no means identical, although both use the "same system of arcs and paths." We quote from Howell, Professor of Physiology in Johns Hopkins University:

"Mosso found that if a muscle — e. g., the flexor digitorum sublimis — is stimulated directly by the electrical current and its contractions are recorded by the ergograph, it will give a curve similar to that figured above for the voluntary contractions, except that the contractions are not so extensive.

Under these conditions *the muscle, when completely fatigued to electrical stimulation, will respond to voluntary stimulation from the nerve centres. . . . On the other hand, after fatigue from a series of voluntary contractions it has been observed that the muscle will still give contractions if stimulated by electricity"* (Howell, ed. 3, p. 49 sq.).

The Refrain of Prof. Maudsley.

As to the refrain of Prof. Maudsley, namely, that the consideration of the reflex mechanism has taken out a great proportion of what we are in the habit of comprising "vaguely" under the concept of "mind": we must insist that this is the case only where such *vagueness* of term exists: e. g., in modern psychology. This vagueness is conspicuous in all modern psychological works. A quotation from James will suffice: He asks:

"Shall the study of such machine-like yet purposive acts as these be included in psychology?"

and he answers:

"The boundary line of the mental is certainly vague. It is better not to be pedantic, but to *let the science be as vague as its subject,* and include such phenomena as these if by so doing we can throw any light on the *main business in hand.* It will ere long be seen, I trust, that we can. . . . "At a certain stage in the development of every

science a degree of vagueness is what best consists with fertility. On the whole, few recent formulas have done more real service of a rough sort in psychology than the Spencerian one that the *essence of mental life and of bodily life are one,* namely, 'the adjustment of inner to outer relations.' Such a formula *is vagueness incarnate;* but because it takes into account the fact that minds inhabit environments which act on them and on which they in turn react; because, in short, it takes mind in the midst of all its concrete relations, *it is immensely more fertile than the old-fashioned 'rational psychology,'* which treated the soul as a detached existent, sufficient unto itself, and assumed to consider only its nature and properties" (Pr. of Psych., Vol. I, p. 6).

This *vagueness* of term, which Prof. James admits, and in which he seems to delight, accounts for the fact, that materialistic psychology in trying to throw light on the nature of mind by the facts of the reflex mechanism, has, thus far at least, *missed the point at issue.*

The Fertile Formula of Spencer.

We must, however, follow the discussion of the reflex mechanism in modern psychology a step further, in order to realize why so much stress is put upon its study. It is a well known fact that a stimulus conveyed from the periphery by some afferent nerve to a centre in the

spinal cord does not, when reflected, always end in movement, but very frequently into a secretion of a gland and sometimes into a merely internal secretion or some other trophic action, regulating the nutrition of the tissue thus acted upon. That is suggestive, especially in the light of that "fertile formula" which has done so much real service "of a rough sort" in psychology: "the essence of bodily and mental life are one, namely, the adjustment of inner to outer relations." In keeping with this formula, even the *internal* acts of cognition and volition, intellectual as well as sensitive, must be considered as *reflex actions,* with this difference, of course, that their stupendous complications make experimental investigation impossible. To be quite precise: *psychic* functions are *reflexes with a double aspect: neurosis and psychosis,* the former being the "outer" or the "phenomenal," the latter the "inner" or the "epiphenomenal" aspect of the *reflex machinery.*

As PRECISE as the VAGUENESS of the Formula Will Allow.

The bewildered reader may wonder at the "preciseness" of this language; well, it is the preciseness which is in keeping with the vague-

ness of the formula. It is better not to be pedantic, but to let the conclusion be as vague as the formula from which it is deduced. That is all the consolation the writer can offer at present. Perhaps a look at the design on the cover of this book will help him towards understanding some of the terms used. A fuller explanation of them we must reserve for our chapter on the spirituality of the soul, when we shall discuss the *disclaimers of materialism on the part of materialists.* For most of them are just as emphatic in disclaiming materialism as they are radical in explaining everything by the reflex machinery. At present we are only concerned with the latter part of the statement, namely, that we must be *radical with the reflex machinery.* Prof. James insists:

"The conception of reflex action is surely one of the best conquests of physiological theory; *why not be radical with it?* Why not say that just as the spinal cord is a machine with few reflexes, so the *hemispheres are a machine with many, and that that is all the difference? The principle of continuity would press us to accept this view"* (Pr. of Psych. I., p. 129).

"The Highest Functions of the Nervous System."

Now we are prepared for the following passage from Prof. Maudsley, in which he discusses the *highest functions of the nervous system: the functions of intelligence.* He says:

"But we still leave untouched the highest functions of the nervous system — those to which the hemispherical ganglia minister. These are the functions of intelligence, of emotion, and of will; they are the strictly mental functions. The question at once arises whether we have to do in these supreme centres with fundamentally different properties and different laws of evolution from those which belong to the lower nerve-centres. We have to do with different functions certainly; but are the organic processes which take place in them essentially different from, or are they identical with, those of the lower nerve-centres? They appear to be essentially the same: there is a reception of impressions, and there is a reaction to impressions, and there is an organic registration of the effects both of the impressions and of the reactions to them. The external stimuli do not, it is true, ascend directly to the supreme centres as they do to the spinal centres and the sensory centres; they are transmitted indirectly through the sensory ganglia; it is through the senses that we get our ideas. . . . But this does not alter the fundamental similarity of the organic processes in the higher centres" (l. c. p. 24).

Localization of Functions in the Brain.

This brings us to another great discovery of modern physiology, which is most intimately connected with that of the "reflex mechanism," namely: *the localization of functions in the brain.* The following is Prof. James' account of the general theory of localization of functions:

"The various special forms of thinking are functions of special portions of the brain. When we are thinking of things seen, it is our occipital convolutions that are active; when of things heard, it is a certain portion of our temporal lobes; when of things to be spoken, it is one of our frontal convolutions. Professor Flechsig of Leipzig (who perhaps more than any one may claim to have made the subject his own) considers that in other special convolutions those processes of association go on, which permit the more abstract processes of thought, to take place. . . . So firmly established do the main positions worked out by the anatomists, physiologists, and pathologists of the brain appear, that the youth of our medical schools are *everywhere taught unhesitatingly* to believe them. The assurance that observation will go on to establish them ever more and more minutely is the inspirer of all contemporary research" (Human Immort., p. 8 sq.).

The "Association Centres" of Prof. Flechsig.

It would surely be interesting to know by what actual research work the "*thought-centres*" have been established. We must, then, needs examine the work done by the Leipzig Professor. A detailed account of it can be obtained in any standard text-book of physiology under the heading of "association-centres." We quote from Prof. Howell:

"The *motor* and *sense* areas occupy only a small portion of the cortex, forming islands, as has been said, surrounded by much larger areas. Flechsig ('Gehirn und Seele,' Leipzig, 1896; also 'Archives de Neurologie,' Vol. II, 1900) has designated these latter areas as *association areas,* and has advocated the view that they are the portions of the cortex in which the higher and the more complex mental activities are mediated, *the true organs of thought.* His views . . . have been based chiefly on the study of the embryo brain with reference to the time of acquisition of the myelin sheaths. Thus he finds that the fibres to the sense areas acquire their myelin, and therefore according to his view become fully functional before those distributed to the association areas. Moreover, in the embryo, at least, these latter areas *are not supplied with projection fibres,*— that is, they *are not connected directly with the underlying parts of the nervous system*" (l. c. p. 219 sq.).

In other words, whilst the *motor* and *sense areas* of the brain are directly connected with the peripherical organs of the body *by outgoing fibres*, there are even greater areas in the cortex of the brain which — at least in the embryo — *are not so connected;* and these portions of the cortex are called "*association areas,*" because

"*their connections are with the various sense centres and motor centres of the cortex.* The association areas may be regarded, therefore, as the regions in which the different sense impressions are synthesized into complex perceptions or concepts. The foundations of all knowledge are to be found in the sensations aroused through the various sense organs; . . . *the union of these sense impressions into organized knowledge is, according to Flechsig, the general function of the association areas.* This function of the association areas is indicated by the anatomical fact *that they are connected with the various sense centres by tracts of association fibres*, suggesting thus a mechanism by which the sense qualities from these separate sense centres may be combined in consciousness to form a mental image of a complex nature. . . . In the association areas our memory records of past experiences and their connections are laid down in some, as yet unknown, material change in the network of nerve cells and fibres" (l. c. p. 220).

Subdivision of the Association Areas.

It will repay us to consider the subdivisions of the "association areas." We quote again from Prof. Howell:

"On anatomical grounds Flechsig distinguishes three (or four) association areas: The *frontal* or anterior, . . . the *median* or insular, . . . and the *posterior*. . . . This area Flechsig suggests may be subdivided into a *parietal* area . . . and a *temporal* area. *The greater relative development of these areas is one of the features distinguishing the human brain from those of the lower mammals.* . . Basing his views upon the nature of *the association tracts connecting them with the sense centres,* he suggests that the *posterior* area is concerned particularly in the *organization of the experiences founded upon visual and auditory sensations,* and shows *especial development in cases of talents, such as those of the musician,* which rest upon these experiences" (l. c. p. 221).

The Anterior Area and the "Körpergefühlsphäre."

Of special interest to us is the *anterior area,* because it is in closer connection with the "Körpergefühlsphäre." And what is that? Why, that is a big German word, to start with, — a jawbreaker surely. Rendered into plain English, it means "body-sense-area." Of course, we feel that we have a body, we feel

its movements, its pains and pleasures, its desires and appetites; and just as there are special centres in the brain for the sensation of hearing, seeing, etc., so there are also centres for this "body-sense," and the area of the cortex subservient to this sense, is the "body sense area," "die Körpergefühlsphäre." And what has this "Körpergefühlsphäre" to do with the highest intellectual functions of man? We must let Prof. Flechsig explain this. His views are thus expressed by Prof. Howell:

"The *anterior area,* being in closer connection with *the body sense area,* may possibly be especially concerned in the organization of experiences based upon the internal sensations (bodily appetites and desires). *In this part of the brain possibly arises the conception of individuality, the idea of the self* as distinguished from the external world. And in alterations or defective development of this portion of the brain may lie possibly the physical explanation of mental and moral degeneracy. This general idea is borne out in a measure by histological studies of the brains of those who are mentally deficient (amentia) or mentally deranged (dementia). It is stated (Bolton, 'Brain,' 1903, p. 215) that the brain in such cases shows a distinct wasting of the cortex and that the maximum focus of this change is found in the prefrontal lobes (*anterior association-area*). In the case of the idiotic this area is distinctly undeveloped and in

the insane the atrophy is marked in proportion to the degree of dementia" (l. c. p. 221).

The Speech Area.

As speech is something distinctive of man, the vehicle of intellectual thought, the speech centres are of great interest to us. The convolution of brain known as the island of Reil, is designated as the speech area, both on the *sensory* and on the *motor* side; for we must both *perceive the spoken words* and we must *control the movements of those muscles subservient to the pronunciation of words.* We quote again from Prof. Howell:

"Regarding the peculiar function of the cortex of the island of Reil there are no facts sufficiently distinct to warrant a positive statement, although, as stated above, the data from pathological anatomy would seem to indicate that this portion of the cortex may form a part of the speech area both on the motor and the sensory side. The area is much more developed in man than in the lower mammals, and its connection with other parts of the cortex by means of association tracts are such as to lead to the supposition that its general functions are of the higher synthetic character attributed to the association areas in general" (l. c. p. 222).

Separating Facts from Suggestions.

Separating *facts* from the numerous *suggestions* and *hypotheses,* we may say that Prof. Flechsig by actual research has found the following: There are large areas of the cortex, comprising probably two-thirds of it, which — at least in the embryo — are not supplied with projection fibres, i. e., they are not directly connected with the underlying parts of the nervous system; but they are connected by tracts of "association" fibres with the motor and sensory areas, which latter are, at least in part, fairly well established.

It must be remarked, first of all, that the absence of "projection" fibres in these so-called "association" areas, as far as the adult brain is concerned, is very much disputed by some of the most eminent physiologists (cf. Howell, l. c.).[4] But suppose, for the sake of argument, these "projection" fibres are really wanting in the brains of the adult, what follows from the anatomical fact that there are "association" fibres connecting these areas

[4] Dr. Willy Hellpach rejects Flechsig's thought-centres both on *anatomical* and on *psychological* grounds. "Die gefeiertsten Vertreter der hirnantomischen Forschung haben sie abgelehnt" (Die Grenzwissenschaften der Psychologie, Leipzig, 1902, p. 73); "die Flechsig'sche Theorie . . . arbeitet mit psychologischen Ungeheuerlichkeiten" (l. c. p. 74).

with the known "sensory" and "motor" areas of the cortex? According to Prof. Flechsig this anatomical fact *suggests* that the function of the "association" areas is "the union of the various sense impressions into organized knowledge." Therefore they are *thought centres.*

No Syllogism, of Course — Only a Suggestion.

This is surely no syllogism, even of a rough sort, but only a *suggestion* of Prof. Flechsig. But syllogisms are really not wanted in modern discussions; they have long ago been ruled out of court by such like phrases: what has the syllogism ever done in promoting human knowledge? The *suggestions* of tentative hypotheses have taken the place of the syllogism. It is well, then, to emphasize that we have really not to do with a *proof,* but only with *a suggestion* of Prof. Flechsig. Hence it is that Prof. Howell, after explaining Flechsig's views, adds by way of caution:

"By way of *caution* it should be stated that the general ideas developed above in accordance with Flechsig's views do not meet with universal acceptance. Some of the most experienced observers are unwilling to admit that such a degree of local-

ization of the psychic activities really exists" (l. c. p. 222).

A Suggestion Not Suggested by Facts.

But even the *suggestion* of Prof. Flechsig is a pretty bad one, as it supposes a fundamental error of modern psychology, that *intellectual ideas* and even *organized knowledge* — which is an orderly system of judgments and reasoning processes — are identical with *sense impressions* and their combinations. "Putting together sense impressions" is indeed a *condition* for rational thought, as the latter is invariably preceded and accompanied by sensitive activity; but rational thought itself, even in its simplest elements, is something altogether distinct from sense perceptions and their combinations. To the neglect or rather to the willful obliteration of this distinction we shall return in another chapter.

A Better Suggestion.

Starting out from the same anatomical fact, that the "association" areas are connected with the "sensory" areas by tracts of association fibres, we would suggest, that these association areas are possibly the centres for the functions of the *internal senses,* on which

rational thought depends as on a condition, as was always recognized by St. Thomas (S. Th. 1, q. 78, a. 4) and his commentators.

Modern psychologists who are willing to read these passages, will find that our suggestion is not only in accord with the general doctrine proposed there, but they will learn the surprising fact, that St. Thomas adopted without the least scruple the *localization of functions* as taught by the *"medici"* (physicians) of his time, as far as they refer to *internal sensations.* Thus v. g., the organ of the "vis aestimativa," which is of such importance in instinctive activities, was said to be in the middle portion of the brain ("cui medici assignant determinatum organum, scilicet mediam partem capitis," S. Th. l. c. in c.). Again the organ for the first *reception* of sense-impressions was held to be distinct from that which retains or stores them up in sensitive memory: "recipere autem et retinere reducuntur in corporalibus ad diversa principia" (l. c.). The reason assigned by St. Thomas: "Nam humida bene recipiunt, et male retinent. E contrario autem est de siccis," may justly be disregarded by modern physiologists and be replaced by the results of actual research work. But the bold fact is there, that *St. Thomas*

actually localized the various functions of the internal senses.

Supplementing the Localization of Functions as Taught by St. Thomas.

Suppose, then, we *supplement* the doctrine of St. Thomas on the *localization of functions* by what has been established by actual research work. If we make the "association areas" of Prof. Flechsig the organs of *internal sensation,* everything will be satisfactorily accounted for.

This *suggestion* of ours would in fact explain all the particulars, on which so much stress is put. We could, without implying materialism, say that "in the association areas our memory records of past experiences are laid down in some, as yet unknown, material change in the network of nerve cells and fibres"; for even our *intellectual memory* depends on our *sensitive memory.* It would, furthermore, be quite intelligible, why "the greater relative development of the association areas is one of the features distinguishing the human brain from those of the lower mammals"; for the use of the *imagination* and *sensitive memory* is overwhelmingly greater in man than in brutes. Even the most philo-

sophic and abstract language teems with imagery.

Again, we could, with Prof. Flechsig, suggest "that the posterior area is concerned particularly in the organization of the experiences founded upon visual and auditory sensations" and could thus account for "the special development of these areas in cases of talents, such as those of the musician which rest on these experiences."

Again, there would be nothing surprising in the statement, that "in alterations or defective development of the association areas may lie possibly the physical explanation of mental and moral degeneracy." This would, in fact, be only making more detailed the old adage: "mens sana in corpore sano"; it would be only putting in modern terminology what the scholastics stated in this regard (cf. v. g. Suarez, De Anima, l. 3, c. 13, n. 4). We could say that "this general idea is borne out in a measure by histological studies of the brains of those who are mentally defective (amentia) or mentally deranged (dementia)." We say "in a measure"; for we must not forget the fact, that there is such a thing as *substitution of functions* in the brain and that there are cases on record in which in spite

of large tumors affecting one of the hemispheres of the brain, the owner of the brain enjoyed complete mental integrity.[5]

With regard to "the cortex of the island of Reil" there would be no difficulty in admitting

[5] Dr. Sanderson Christison in his "Brain in Relation to Mind" (Chicago, 1900), has collected a number of interesting cases which show that the whole theory of localization, even as to the sensory and motor areas, must be accepted with great caution. Thus, for instance, he mentions the case of a shop girl, 20 years of age, reported by Dr. Byron Bramwell in *Brain* (Spring, 1899). "The speech center and a very large portion of the motor area were completely destroyed, yet there was absolutely no paralysis and no speech defect" (Christison, l. c. p. 143). Case 11, reported by Dr. Byron Bramwell in the same publication, is similar (Christison, l. c.).

As to the "*thought-centres*" of Flechsig we would single out the following cases. Dr. Taylor (Boston Med. and Surg. Jour., Oct. 27, 1898) reports a man, 36 years of age, with extensive destruction of the left frontal lobe of the brain who still possessed complete mental integrity (Christison, l. c., p. 47).— The celebrated Gage case, reported in the Am. Jour. of Med. Sci., July, 1850, is thus stated by Dr. Christison: "A crow-bar was driven into his left cheek and passed out through the crown of his forehead while engaged at blasting. He immediately climbed into a wagon and rode home, where the doctor found him sitting upright in a chair, and apparently in full possession of his mental faculties. He afterwards lived twelve years, earning his living as a coachman and barn-hand." (Christison, l. c. p. 48) — Of great interest is the case of a carpenter who died at the age of 57 years. (Reported by Dr. Pierce Baily, Am. Jour. Med. Sci., March, 1899.) "Up to the last his speech was perfectly normal, reading was not interfered with, and memory was unaffected. He was courteous and intelligent and patient; he was cheerful and attentive, . . . liked to talk politics, . . . was singularly free from periods of depression . . . or of any other mental manifestation so common in gross brain diseases" (Christison, l. c. p. 60); at the autopsy the right cerebral hemisphere was found to be practically destroyed and "a large cyst containing a straw-colored fluid occupied the frontal lobes of the same side" (l. c.). In other words this man showed complete mental integrity in spite of the absence of the "thought-centre" in the right hemisphere.

That these are by no means isolated cases, may be seen from the chapter of Dr. Christison's book referred to.

the suggestion based on "the data from pathological anatomy" that, namely, "this portion of the cortex may form a part of the speech area both on the motor and sensory side." And as speech is a distinctive feature of man, the necessary complement of his rational nature, we would see nothing surprising in the fact that this area in particular "is much more developed in man than in lower mammals." We could say, that "its connections with other parts of the cortex by means of association tracts are such as to lead to the supposition that its general functions are those attributed to the association areas in general," viz., the functions of the *internal senses* which are the necessary *condition* for the *highest mental activities of man,* as long as his soul remains united to his body.

The "Körpergefühlsphäre" Again and Some Crude Metaphysics.

There is, however, one suggestion of Prof. Flechsig which is really *not suggested by facts* but only by preconceived ideas of *materialism;* in truth this suggestion is not even intelligible except to those who have waded through a good deal of crude metaphysics in modern psychology. "The *anterior* area," we are

told, "being in closer connection with *the body sense area,* may possibly be especially concerned in the organization of experiences based upon internal sensations (bodily appetites and desires)." So far the passage is intelligible. Now comes the surprising suggestion: "In this part of the brain possibly *arises the conception of individuality, the idea of self as distinguished from the external world.*" To most readers this will sound as odd as if we were to suggest, that, because apples make cider, the formula of water is H_2O. What nexus is there between "the body sense area" and the "conception of individuality" or "the idea of self"?

The missing link in this suggestion will be supplied by Prof. James. In that never-ending chapter on the "*Consciousness of Self*" (Pr. of Psych. vol. I, ch. X, pp. 291–401), which is only a continuation of another lengthy chapter on "*The Stream of Thought*" (l. c. pp. 224–290), the Harvard Professor labors hard to make his readers realize, how the Arch-Ego of the olden days can be successfully eliminated, or what can be done to give "scientific" expression to such a barbarous term as "*ego.*" Bringing the discussion to a very fine point, though hampered by the fact that it is

"desperately hard" to put our finger on the Ego (the scholastics, in fact most men are altogether too easy-going in the analysis of the Ego), this is what, in the conception of James, the bothersome term "Ego" really means:

"In a sense, then, it may be truly said that, in one person at least, the '*Self of selves,*' when *carefully examined, is found to consist mainly of the collection of these peculiar motions in the head or between the head and the throat.* I do not for a moment say that this is *all* it consists of, for I fully realize *how desperately hard is introspection in this field.* But I feel quite sure that *these cephalic motions* are the portions of my innermost activity of which I am *most distinctly aware.* If the dim portions which I cannot yet define should prove to be like unto these distinct portions in me, and I like other men, *it would follow that our entire feeling of spiritual activity, or what commonly passes by that name, is really a feeling of* BODILY ACTIVITIES *whose nature is by most men overlooked*" (Pr. of Psych. I, p. 301).

After all that has been said in this and the previous chapters, we have nothing to add either concerning this specimen of crude metaphysics from James' Psychology or on the suggestion of Prof. Flechsig which is based upon such crude metaphysics. It would be really

doing too much honor to such vagaries of modern science, and without further discussion we rest our case. "*Quousque tandem abutere patientia nostra!*"

Summing Up.

Such, then, are the boasted facts, on which modern materialism rests. If freed from accretions of dogmatic presuppositions and metaphysical monstrosities, everything that really deserves the name of "actual research work" fits without the least trouble into the psychology of the schoolmen. In fact this actual research work has only detailed the knowledge which is, and always has been, the common property of mankind.[6] The real value of modern discoveries consists in this, that they have been turned to practical account, v. g., in cases of asphasia or epilepsy. Modern advances have made it possible to cure certain cases of mania or degeneracy, due to some pressure or obstruction in the brain. This and much more must be said to the credit of modern physiology. But nothing, absolutely nothing, has been brought to light which could give even a semblance of justification to the ma-

[6] This is also forcefully stated by Ladd in his "Elements of Phys. Psychology," p. 592 (n. 7) sq.

terialistic teaching that thought is a function of the brain or that mental activity of any kind, even of the sensitive order, can be explained without a simple soul.

We have indeed not yet established our thesis, and we wish to emphasize that our thesis concerning the *simplicity* and *spirituality* of the soul, *needs demonstration* and that scholastics have never treated this thesis as self-evident; no scholastic ever claimed that we are by direct experience aware of the *simplicity* and *spirituality* of the soul. The proofs for these attributes of the soul we shall consider in the subsequent chapters. At the conclusion of this chapter we claim no more and no less than that materialism in trying to establish its contention, has *missed the point at issue*.

Chapter V

The Simplicity of the Human Soul. The Perception of Abiding Personal Identity: The First Stumbling Block of Materialism

MATERIALISTIC philosophy having failed to prove its contention, we must now consider what evidence there is to prove that we have a *soul distinct from the body,* or in other words what evidence there is for the *simplicity* of the last subject and source of all mental activity. Before entering, however, upon the time-honored proofs of the scholastics, we must explain more fully our thesis and thus remove certain misconceptions prevalent in materialistic circles.

Definition of Terms.

When we contend that the soul of man is *simple,* our thesis implies that the soul, unlike the body, is *not composed of quantitative parts* and is, therefore, something *distinct from*

the body. We wish it, however, clearly understood that this does not mean that the soul is "a *detached* existent, *sufficient unto itself,*" as Prof. James describes the attitude of the "old-fashioned 'Rational Psychology'" (Pr. of Psych. Vol. I, p. 6.). Anyone acquainted with scholastic philosophy knows that this is but a caricature of our doctrine. Though *distinct* from the body, the soul is actually *united* to the body to form one complete substance with it: soul and body are *complementary parts of man.* As long as this union lasts, the soul is by no means *"sufficient unto itself";* it neither exists apart from, nor acts independently of, the bodily organism. Ever since Descartes only a debris of the work accomplished by the sages of old is left, and we are not astonished that the terminology of Aristotle and the scholastics who designated the soul the "entelecheia" or "substantial form" of the body is either wholly ignored or hopelessly misunderstood. It is not within the scope of this chapter to explain these terms in which the doctrine of the *substantial union* of soul and body is crystallized; for the purposes of our present discussion it suffices to emphasize that our thesis concerning the *simplicity* of the human soul does not imply any

such monstrosities as are imputed to us by James and other modern writers.[1]

Again whilst claiming that the soul of man is a simple or unextended substance, we are not guilty of the doctrine originated by Leibnitz (cf. Dr. Eisler's philosophical dictionary under "Seelensitz") that the soul occupies a mere point of the body, nor do we, like Descartes (cf. Eisler, l. c.), designate any particular organ, as for instance the pineal gland, as the seat of the soul.[2] There is really no need of discussing the seat of the soul. On account of its simplicity, the soul pervades the whole body and all its various organs and thus is the last principle of all vital functions of the vegetative and sensitive order. This understood, there will be no difficulty, as we have explained

[1] As a curiosity we quote the following from "The Soul of Man" by Dr. Paul Carus: "The old psychology of former centuries considered the soul as consisting of a special substance, *a kind of ethereal fluid endowed with several mystical qualities.* . . . Is it not strange that the old psychologists arraign the modern view as materialistic? . . . We, however, regard the new view as a *redemption from the cruder and materialistic conception of soul-life*" (l. c. p. 426 sq.).

[2] This is Paulsen's account of the scholastic doctrine: "In den Kreisen, die dem Materialismus nicht anhängen, ist etwa folgende Vorstellung von dem metaphysischen Wesen der Seele herschend: die Seele ist eine einfache, unausgedehnte, immaterielle Substanz; als solche ist sie absolut beharrlich und unvergänglich; sie ist Träger von Kräften, wodurch sie die Bewusstseinsvorgänge bewirkt; endlich, *sie hat an einem bestimmten Punkt des Gehirns ihren Sitz, von dem sie mit dem Leibe in einem Austausch von Wirkungen steht*" (quoted by Höfler, Psychologie (1897), p. 48, note).

in the preceding chapter, in reconciling the simplicity of the soul with the *localization of those psychic functions* which admit of such localization. Hence what Huxley says in his "Animal Automatism" is incorrect.

"Of two alternatives one must be true. Either consciousness is the function of a something distinct from the brain, which we call the soul, and a sensation is the mode in which this soul is affected by the motion of a part of the brain; or there is no soul, and a sensation is something generated by the mode of motion of a part of the brain. In the former case, the phenomena of the senses are purely spiritual affections; in the latter they are something manufactured by the mechanism of the body" (l. c. III.—Humboldt Libr. Febr., 1884, p. 196).

Is the scholastic doctrine really not an alternative worth considering? or did Huxley really think he gave a true account of it in his first alternative? No scholastic ever talked of phenomena of consciousness as synonymous with sensations, and of sensations as "purely spiritual affections." Only rational thought and volition were claimed to be "spiritual functions" and not even these were said to be "purely" spiritual, as it was always recognized that even they are in this life *conditioned*

by sensitive functions and thus "extrinsically dependent on the bodily organism." From the spirituality of rational thought and volition, i. e., from their *intrinsic independence* of the bodily organism, the spirituality of the soul itself was inferred. But in the present chapter we are as yet not concerned with this attibute of the soul but only with its *simplicity*.

The First Stumbling Block of Materialism: The Perception of Personal Identity.

In proof, then, of our thesis we appeal, first of all, to a fact which is happily within the reach of every man. It is a fact which is known prior to any scientific investigation, a fact which no scientific analysis can undo, and which must be supposed in describing any of our experiences, a fact, therefore, which forms the very foundation of all scientific enquiry, and in particular of all psychological research: the fact that *we perceive our abiding personal identity throughout our ever-changing experiences*. This experimental fact will serve as our major proposition, to which we subsume: This fact is inexplicable in the supposition of materialism, for our body is no such unitary being, ever abiding by the same; personal identity can be explained only, if besides the ever-

changing body there is within us a substantial being, distinct from the body, which really is the last source and centre of all our internal experiences: a simple soul. Therefore there exists within us such a simple soul. Let us examine both premises of the argument in turn.

Consciousness — taking the term in the broader sense, as including also memory — unmistakably attests the abiding identity of the *ego,* the subject to which we refer all the successive experiences which we designate as *ours.* I am undubitably certain that for the last four years I have been engaged in teaching at St. Louis University, and that I have remained the same person from day to day, from year to year; that I am the same who sixteen years ago crossed the Atlantic; that I am the identical one who attended a village school in Westphalia. I might possibly not be able to point out my own picture in a photograph for which the whole village school posed; I might feel mortified at being told that the peculiarly unattractive features of the bashful youngster on the right hand corner are the exact counterfeit of the lad I then was: but the great event is indelibly in my memory: I am undubitably certain, "I" posed for the picture. Without

putting myself in danger of being taken to some asylum, I cannot seriously doubt whether it was someone else who started the present chapter, but who by this time has become my present self. The fact, then, that we *perceive* our personal identity throughout our ever-changing experiences cannot be denied; the testimony of our consciousness, or rather intellectual memory, is unmistakable. But is it *trustworthy?*

A little reflection will suffice to answer that question. If this testimony of our memory is misleading, what remains of what we designate "*our*" social and moral relations to the outside world, to our fellow-men and to God? In what sense could it possibly be said that "we" are accountable for "*our*" actions to God? We need not, however, enter into such ethical considerations, but can remain on strictly psychological grounds. No mental process is possible without the use of intellectual memory and without the abiding identity of the *ego*.

Suppose we say with James that the "passing Thought is the thinker," i. e., the passing thought is a mere "section" in that "stream of thought" without abiding subject. How in this supposition could a reasoning process take

place? How could succeeding "sections of that stream," which, for convenience sake, we shall call section A, B, C, etc., concur to form a syllogism? Section "A" finds that man is mortal; "B," that Peter is a man. Now neither "A" nor "B," and still less "C" can draw the conclusion: "Therefore Peter is mortal." For no one can draw any conclusion except him who has understood both premises. Unless there is a subject which perceives in succession the major and minor premise, the conclusion cannot be reached. That is just as inconceivable as it would be preposterous for a teacher to expect one student to draw an inference from two propositions, the first of which is only mentally conceived by his right-hand neighbor, the second by his left-hand neighbor. Reasoning, therefore, supposes the abiding identity of the thinking subject, at least for the short space of time required to pass from the major to the minor and to the conclusion. The use of intellectual memory enters into all our intellectual operations. From this it is evident, that the reliability of our intellectual memory in attesting the abiding identity of the *ego* cannot be questioned without jeopardizing the very foundations of human knowledge, without throwing ourselves

into the abyss of absolute skepticism. So much for the major premise of our argument.

The Metabolic Changes of the Body.

In proof of our minor we appeal to the fact that our body is in a state of continual change. The process of *metabolism,* constructive (anabolism) and destructive (katabolism) is uninterrupted; its interruption, in fact, means death of the organism. It is true that the building-up and breaking-down process in the living organism, though incessant, is according to many physiologists comparatively *gradual.* Not all the food we take is assimilated, i. e., not all becomes a part of some living tissue. Apart from those portions of the food which are indigestible and never enter into the circulatory system; and apart from those portions of digested food which become the prey of bacteria in the alimentary canal, even of the circulating food materials only a small percentage (according to the calculations of Prof. Max Rubner of Berlin only 5%) is used for the formation of living tissue. The great mass of food materials (i. e., the remaining 95%) serves a different purpose altogether in the economy of the living organism. We quote from Prof. Howell:

"The chemical changes or metabolism of the body may be divided into two general classes: first, the *heat-producing* or *energy-liberating metabolism,* which results finally in the oxidation of the great mass of the food material and which is essential for the production of body heat, and, second, the *tissue metabolism proper* — that is, the synthesis and disassimilation of the living substance itself" (l. c. p. 922).

From this it will be seen that most of the food material is literally exhaled, it is burned up through the oxygen of the air we breathe and after having served the purpose of animal heat and "locomotion" (muscle work) leaves the body again as CO_2 and H_2O (in respiration and perspiration), and as urea and other nitrogenous waste products. Hence the metabolic changes occurring in the *living tissues themselves,* though incessant, are *comparatively gradual.*[3]

If, however, what other physiologists maintain be true, namely, "that the food does not undergo *combustion,* or katabolic changes,

[3] We say "*comparatively* gradual," i. e., the metabolic changes within the living tissues are *less rapid* than they are according to the views of other physiologists, which we shall consider presently. The red blood corpuscles, for example, are renewed every 20 days, and even the tissue metabolism is, on the view above described, pretty lively. The traditional *seven years* for the complete renewal of the entire body are considered by modern physiologists to be far from correct. The change is more rapid.

until after it is assimilated, that is *until after it has become an integral part of the tissues"* (Prof. Halliburton's Handbook of Physiology, 1904, p. 594), then the change of the body would not only be incessant but comparatively *rapid.* The following from the same text-book will make that clear:

"When a student is first confronted with balance-sheets, representing metabolic exchanges, it is at first a little difficult for him to grasp the fact, that although the amount of nitrogen and carbon ingested is equal to the amount of the same elements which are eliminated, yet the eliminated carbon and hydrogen are not derived from the food direct, *but from the tissues already formed; the food becomes assimilated and takes the place of the tissues thus disintegrated.* Let us suppose we have a tube open at both ends and filled with a row of marbles; if an extra marble is pushed in at one end, a marble falls out at the other; if two marbles are introduced instead of one, there is an output of two at the other end; if a dozen, or any larger number be substituted, there is always a corresponding exit of the same number at the other end of the tube. This very rough illustration may perhaps assist in the comprehension of the metabolic exchanges" (l. c. p. 594).

If this be true, then the actual change which takes place in the living tissues of the body,

is astonishingly great [4] and can be accurately figured: it is equal to the products of combustion given off by the lungs, kidneys and skin.

Our argument, however, is independent of these two opposing views of physiologists. Whether the change within the living tissues be *comparatively gradual* or *comparatively rapid,* one thing is certain beyond all doubt: *the metabolism within the living tissues is uninterrupted.* Even during time of *fasting* and *starvation* the *metabolism* goes on *incessantly;* the body then lives *at its own expense* and hence the weight of the body diminishes. It is interesting to note that not all the portions of the body are equally taxed: the fatty and muscular tissues must bear the heaviest burden, the former, however, only yielding the stored (non-living) material. The heart and *the central nervous system* show almost no diminution of weight even during time of fasting and starvation: the heart and the *brain literally live at the expense of the rest of the body.*

These details concerning the constant change of our body, and of the nervous system in particular, are indeed not necessary in order to

[4] In any case it is a matter of *degree* only; the metabolic changes within the living tissues as figured by Prof. Rubner are to those figured by Prof. Halliburton as 1:20.

understand the value of our argument; but in the light of these details the time-honored scholastic argument becomes overwhelming. Our body really is not and can not be that *unitary being* whose *abiding identity* our consciousness so clearly attests and, in the light of this fact, the position of materialism becomes absolutely untenable. For how can we explain the perception of personal identity, if there is really nothing within us but ever-changing matter? My brain of to-day is not identical with my brain of seven years ago; in fact it is not perfectly identical with my brain of yesterday. Possibly there is no particle left to-day of my brain of seven years ago; possibly the very material which makes up my brain of to-day was seven years ago part and parcel of the brain of a dumb animal or of another man. If, then, there is nothing but matter within us, and if thinking is but a *"mode of motion":* a peculiar vibration of some molecules of the grey matter of the brain, how can I possibly perceive the *identity of my thinking ego?* That is not only impossible but positively self-contradictory; for it means, that I perceive that I am somebody else of seven years ago. This is the first stumbling-block of materialism.

The Answer of James.

James is fully aware of the "logical respectability" of this argument; in fact he emphasizes it strongly against the adherents of the mind-stuff-theory and the associationists in general. He insists that

> "this argument of the spiritualists against the associationists *has never been answered by the latter.* It holds good against any talk about self-compounding amongst feelings, against any 'blending,' or 'complication,' or 'mental chemistry,' or 'psychic synthesis'" (Pr. of Psych. I, p. 161).

Every such theory "leaves out the essential feature" of mental phenomena as we actually know them (l. c. p. 158). And what is this "essential feature" which is overlooked in these theories? It is "some entity other than (the mental states) themselves"; it is "a medium or vehicle" without which "the notion of combination has no sense" (l. c.).

The reader is inclined to say: "Why in the world doesn't he say *'soul'* and be done with it?" James is aware that it would be "the line of least logical resistance" to put it that way (l. c. p. 181); he knows that in avoiding the despised word he is but "beating the bushes" (l. c.). Towards the end, how-

ever, of the chapter referred to, when discussing the merits of the Leibnitzian monad-theory, he is brought so dangerously near something akin to the *soul* of the scholastics, that it seems impossible for him any longer to avoid the term. Then, under the subheading "The Soul-Theory" the Harvard professor makes the following surprising concession:

"Many readers have certainly been saying to themselves for the last few pages: 'Why on earth doesn't the poor man say the *soul* and have done with it?' Other readers, of anti-spiritualistic training and prepossessions, advanced thinkers, or popular evolutionists, will perhaps be a little surprised to find this much despised word now sprung upon them at the end of so physiological a train of thought. But the plain fact is that all the arguments for a 'pontifical cell' or an 'arch-monad' are also arguments for that well known spiritual agent in which scholastic psychology and common sense have always believed. *And my only reason for beating the bushes so, and not bringing it in earlier as a possible solution of our difficulties, has been that by this procedure I might perhaps force some of these materialistic minds to feel the more strongly the logical respectability of the spiritualistic position. . . . I confess, therefore, that to posit a soul influenced in some mysterious way by the brain states and responding to them by conscious affections of its own, seems to me the line of least*

logical resistance, so far as we yet have attained" (Pr. of Psych. I, p. 180 sq.).

The Stream-of-Thought Theory.

From this remarkable passage it is clear that there is more than Logic interested in the problem of the soul. As a matter of fact this is not the final verdict of Prof. James. He refers us (l. c. p. 160) to chapter X, in which he explains at great length how we can account for the unity of consciousness, or the perception of personal identity without recourse to a simple soul. We are to conceive our conscious life as a *stream of thought* "without supposing any other agent than a succession of perishing thoughts" (p. 342); each individual thought constitutes a "section" of this stream; each "section" knows and "appropriates" the previous "section" and *in it* all that went before: thus the perception of abiding personal identity is accounted for (cf. v. g. pp. 342–347).

A Long Succession of Herdsmen.

If it is asked how without a real permanent subject such an act of "appropriation" is possible, he is really endless in his explanations; and he uses diagrams and illustrations to make

the theory intelligible to us. The following illustration which we select not on account of its oddity, but because Prof. James puts much stress on it, contains the gist of his explanations:

"We can imagine *a long succession of herdsmen* coming rapidly into possession of the same cattle *by transmission of an original title by bequest.* May not the 'title' of a collective self be passed from one Thought to another in some analogous way? It is a patent fact of consciousness that a transmission like this actually occurs. . . . Each Thought dies away and is replaced by another. The other, among the things it knows, knows its own predecessor, and finding it 'warm,' in the way we have described, greets it, saying: 'Thou art *mine,* and part of the same self with me.' Each later Thought, knowing and including thus the Thoughts which went before, is the final receptacle — and appropriating them is the final owner — of all that they contain and own. Each Thought is thus *born an owner, and dies owned,* transmitting whatever it realized as its Self to its own later proprietor" (l. c. p. 339).

Surely "we can imagine such a long succession of herdsmen coming rapidly into possession of the same cattle by transmission of an original title by bequest." But the Self which internal experience reveals offers no

point of analogy with such a succession of herdsmen; these constitute a *multiplicity of owners* and the thing owned is the *same cattle;* our Self, as experience reveals it, is a *unitary being* which owns a *multiplicity of succeeding thoughts.* So much about the simile in general. Using scholastic terminology we should say: *"Nego paritatem."*

"A Patent Fact."

When Prof. James continues to say that "it is *a patent fact* of consciousness that a transmission like this (i. e., as described in his theory) actually occurs," we must protest. True, "each thought dies away and is replaced by another,"—at least broadly speaking this is true; for we must not forget that most mortals are every day for six or seven hours in Morpheus' gentle grasp, not to speak of other gaps which occur in the stream of thought of most of us. That, however, each thought knows and includes the thoughts which went before, and that thus the perception of our abiding personal identity is accurately described, is so evidently contradicted by experience, that it is hard to see how James expects to be taken seriously. Does he really mean to say that when I perceive the identity between myself

of to-day and the lad I was in the village school of Westphalia, I "know and include in my present thought all the thoughts which went before and all they contain" down to the days of my childhood? Such an assertion is too preposterous to be considered seriously. The "*patent fact*" is, that without rehearsing all my previous thoughts, I perceive the identity of my present self with that of any experience I had in days gone by, if it only was vivid enough to impress itself on my mind. The "*stream-of-thought theory,*" then, of Prof. James does not even contain a *description* of psychic facts, as they actually occur, notwithstanding the oft repeated asseveration of Prof. James to the contrary.

Still less can his theory be considered an *explanation* of these facts. Even granting, for the sake of argument, that each thought knows and "appropriates" its predecessor and all that went before, how can James possibly account for this "*appropriation*"? Only on the supposition of a permament subject could such an "appropriation" occur. We must let James himself explain this.

"Herd-Brand" and "Self-Brand."

For the understanding of the following passage we must remind the reader of a distinction on which James puts much stress in this connection and which was briefly alluded to in our first chapter, namely, the distinction between *warm* thoughts and *cold* thoughts, the former belonging to the "me" and the latter to the "not-me." As the successive herdsmen know their cattle by the *"herd-brand,"* so the successive thoughts know and are known, as belonging to the "me," by the *"self-brand,"* viz., the *"warmth"* and *"intimacy,"* which cling to them. This premised, the following passage will be intelligible to the reader:

"Our recent simile of the herd of cattle will help us. It will be remembered that the beasts were brought together into one herd because *their owner found on each of them his brand.* The 'owner' symbolizes here that 'section' of consciousness, or pulse of thought, which we have all along represented as the vehicle of the judgment of identity; and *the 'brand' symbolizes the characters of* WARMTH and continuity, by reason of which the judgment is made. There is found a *self*-brand, just as there is found a herd-brand. Each brand, so far, is the mark, or cause of our knowing, that certain things belong together" (l. c. p. 337).

The gist of what James says is this: Each successive thought knows its predecessor and is known by its successor as belonging to the Self by the "*Self-brand*" which is the "warmth" clinging to it. But what is this "warmth" clinging to the thought? Divesting the phrase of its crude imagery, in its last analysis it really means a thought having for its object the Ego, and by this it is distinguished from a thought whose object is the "not-me" ("cold" thoughts). We are, then, just where we were before, when we asked how successive perishing thoughts can "appropriate" their predecessors. "*Appropriating*" and "knowing its predecessors by the *warmth*" mean one and the same thing: uniting them in the same abiding Ego. The perception of the abiding Ego, then, is *not accounted for,* but *only restated.*

Prof. James, then, once again,— has been "beating the bushes" and he must have been aware of the fact, for he goes on and on, explaining further and further,— but always finding himself, where he was in the beginning. Instead of *explaining* the perception of personal identity, he only *restates it.*

At last, with remarkable simplicity and frankness he explicitly admits his plight, when

he says: "The only point that is *obscure* is the *act of appropriation* itself" (l. c. p. 340). In other words he admits that his theory fails to explain the real point at issue. After a final supreme effort to make this point plausible to us, he says:

"At least, if I have not already succeeded in making this plausible to the reader, I am hopeless of convincing him by anything I could add now" (l. c. p. 344).

Side by side with this explicit declaration of bankruptcy, it is ludicrously pathetic, when James continues:

"The unity, the identity, the individuality, and the immateriality that appear in the psychic life are thus (!) accounted for as phenomenal and temporal facts exclusively, and with no need of reference to any more simple or substantial agent than the present *Thought* or 'section' of the stream" (l. c.).

If the reader is dissatisfied with this explanation, he is told

"*that we must take care not to be duped by words.* The words *I* and *me* signify *nothing mysterious and unexampled* — they are at bottom only names of emphasis" (l. c. p. 341, note).

Now this suggestion of James is really a good one. "We must take care not to be duped by words," not even by those of Prof. James. The words "*I*" and "*Thou*" really "signify nothing mysterious and unexampled." If anything, the meaning of these terms must be within the reach of every man. And if James cannot make the perception of personal identity clear to us by his "stream of thought theory," we conclude that it is a hopeless failure and that it leaves our argument for the simplicity of the soul untouched.

Prof. Titchener's Explanation of Memory.

Professor Titchener finds himself in the same predicament as James. It goes without saying that he is emphatic in rejecting the explanation of intellectual memory as given in the old psychology; he deplores, in fact, the use of such unscientific terms as memory, recognition, recollection, etc., and sets about reinterpreting these unavoidable terms. He says:

"All these words — retention, reproduction, recognition, recollection, memory, etc.— have come down to us from a psychology which did conceive of the mind as a living creature of some kind, residing in the body. . . . It laid up its percep-

tions, as the careful husbandman lays up a stock of grain. . . . We have outgrown these views. But words which have been used as long as these cannot be simply thrown away, and replaced by new terms . . . We must take them; but we must also reinterpret them" (Primer, p. 198 sq.).

How then are these old-fashioned terms to be reinterpreted? The Cornell Professor begins by saying that on certain perceptions we find *the mark of familiarity.*

"Most of our perceptions and ideas are familiar to us . . . *we realize,* when they enter a consciousness, that they are familiar." (Primer, p. 188.) "The first thing that we have to do, then, in investigating passive recognition and memory, is to find out what precisely the '*familiarity mark*' is; of what processes it consists, and *how it becomes attached to perceptions and ideas*" (l. c. p. 189).

What the "MARK OF FAMILIARITY" is.

This "mark of familiarity," he goes on to explain, consists of two things, (1) associated ideas and (2) the *mood of confidence* or *at-homeness.*

"When you recognize a figure in the street, two things happen. In the first place, the perception is *supplemented by a number of ideas* . . . it is a case of *simultaneous association.* . . . In the second place, you are thrown into an agreeable

mood, the *mood of ease or confidence, of 'at-homeness';* you feel familiarly towards the figure. . . . The same thing holds of *memory.* When you remember something . . . a scene of your childhood . . . the idea . . . is supplemented at once by a crowd of other ideas; and, *as these ideas cluster round it, the at-home feeling comes to.* These two groups of processes, then,—*the associated ideas and the mood of confidence,—together make up the mark of familiarity"* (p. 189 sq.).

This *"at-home feeling"* or *"mood of confidence,"* if translated into plain language, is nothing else than the perception that "I" have seen that figure on the street before, that "I" have been the subject of that experience in the days of *"my"* childhood. So far, then, Professor Titchener has *not explained* but *only restated the fact of intellectual memory.* Nor are we brought any further by his supplementary notes on this "familiarity mark." He says:

"The mood of *at-homeness* or *confidence is a weakened form of the emotion of relief* . . . a very degenerate form of this emotion . . . the mood consists solely of a pleasant affection and of the organic sensations set up by an easy and careless bodily attitude. It follows . . . that every recognition is inherently pleasant" (l. c. p. 191).

In the light of what James says on the true meaning of *self of selves* (cf. p. 111), this passage of the Cornell Professor may become somewhat intelligible to the reader. But waiving such crude metaphysics, on which we have said enough, and supposing, for the sake of argument, that "every recognition is inherently pleasant," this surely does not explain how without *the abiding identity of the ego* we perceive a former experience as *our own*. Prof. Titchener himself feels the insufficiency of his explanation.

"We say that certain associated ideas and a certain mood make a 'perception' a 'recognized perception.' 'Very well,' you may reply; 'but how do we recognize the ideas and the mood? They cannot help us to recognize anything, unless they are themselves recognized.'"

or, as we should put it, unless they are recognized as modifications of the abiding substantial Ego.

"The answer to the objection is this. The grouping of associated ideas and mood round a perception MEANS *that that perception has occurred in* OUR *experience on some previous occasion.* But the 'recognition' of a perception means this, too. 'Recognition,' then, simply sums up in a single word 'grouping of associated ideas and presence of

mood.' These processes do not themselves need recognition: they *are* recognition" (l. c. p. 191 sq.).

Finding Ourselves Where We Were Before the Explanation.

After all these scientific explanations, therefore, we find ourselves just where we were in the beginning. The "*familiarity mark*," the "*mood of confidence*," the "*at-home feeling*," which gradually shades off into a mood of "*of-courseness*" (p. 200), in their last analysis mean "*that that perception has occurred in* OUR *experience on some previous occasion.*" This was the very thing to be explained.[5] If you are dissatisfied with this explanation, because the "recognition" of the "familiarity mark" is not explained, you are told that the processes which are involved in this "familiarity mark" "*do not need recognition: they* ARE *recognition.*"[6] To put it differently.

[5] Ladd rightly remarks: "Acts of memory . . . are not developments from perception. . . . All talk about the 'image' of memory as though it were merely a faint or faded-out impression of sense is quite unavailing; *it does not hit the real point of inquiry, and consequently does nothing to explain the mystery* (comp. Part II, chap. X, §§ 18 ff). The vital element in memory, that which makes it to be *memory*, is neither a sensation, nor a modified form of sensation, nor a development of sensation" (Elements of Phys. Psych., p. 630).

[6] Prof. J. M. Baldwin, discussing the various theories of recognition rightly says: "There is more in recognition than the sense of familiarity with an image. There is the feeling of ourselves as in familiar circumstances. It is one's self

You ask why we recognize certain past experiences as our own. The final answer is, because, if we didn't, it would not be recognition; for that *is* recognition. Memory is just memory, and that's all.

Retorting James' Criticism of Mill.

To come back to James. It is interesting to note how keenly the Harvard Professor criticises the theory of Mill which differs but slightly from his own. Mill starts out by postulating successive states of consciousness without permanent subject; and in order to explain the perception of personal identity, he postulates further that this series of thoughts, without "a tie," is conscious of itself *as a whole*. In the further explanation of this theory Mill is forced to make concessions which look dangerously like admitting the *soul* of the scholastics. James in his criticism takes him

who has been in this state before. That is, there is consciousness of *an abiding active self which persists in the twofold experience of presentation and representation*" (Handbook of Psychology, New York, 1890, ed. 2, p. 178). Taking this as a major proposition we subjoin as a minor another passage from the same author: "If the mind is only a bundle of playing and changing states, whence comes this permanent background to which alone the states are the same, and by which alone they are recognized as the same?" (l. c. p. 174). And we draw the inference: Therefore the associanist view of mind which admits 'only a bundle of playing and changing states' is evidently inadequate in coping with a problem of recognition.

mercilessly to task for his failure to explain the act of "appropriation." He rightly insists that Mill must *beg memory* without explaining it (l. c. p. 359 sq.).

But all this is true of James himself. In all his diagrams and illustrations, when analyzed, he does nothing but *restate the fact of intellectual memory* which unites the present Self with that of some past experience: he must *beg memory* without explaining it. The point on which his whole theory hinges: "the act of appropriation" is admittedly obscure; in scholastic terminology we should say, it is a "petitio principii." When James, therefore, says:

> "John Mill's concessions may be regarded as the *definitive bankruptcy of the associanist description* of the consciousness of self" (l. c. p. 359).

we retort the criticism on James himself. He like Mill is "perplexed in the extreme" (l. c.) in explaining the "inexplicable tie" (l. c. p. 360).

But James' criticism of Mill is of special interest to us, because we are told by one of their ranks, what to think of the general "*associanist description* of the consciousness of self," of which the theories of James and Mill

are only varieties. And this is our only apology for dwelling so long on this subject. For James in a former part of the chapter gives us a bit of surprising information which reveals an appalling condition of modern psychology. He says:

"This description of personal identity will be recognized by the instructed reader *as the ordinary doctrine professed by the empirical school.* Associanists in *England* and *France,* Herbartians[7] in *Germany,* all describe the Self as *an aggregate* of which each part, as to its *being,* is a *separate fact.* So far so good, then; *thus much is true whatever farther things may be true;* and it is to the *imperishable glory of Hume and Herbart* and their successors *to have taken so much of the meaning of personal identity out of the clouds* and made of the Self an empirical and verifiable thing" (l. c. p. 336).

In the light of our criticism and James' own declaration of "definitive bankruptcy of the Associanist description of Self-consciousness" this eulogy of Hume and Herbart and their successors sounds peculiarly odd. Though they have admittedly not succeeded in explain-

[7] Herbart has indeed *nominally* retained the doctrine of a simple soul; but it is a mere misnomer, if the term be taken in the scholastic sense. On this subject cf. v. g. Wundt, Gr. der Phys. Psych., III, p. 757. A similar remark applies to many other modern psychologists.

ing or even describing the "Self as an aggregate of which each part, as to its being, is a separate fact"; though they have been forced to concessions which "amount, so far as they are intelligible, to the admission of something very like the Soul" (l. c. p. 358); still it is a foregone conclusion that their general doctrine, which dogmatically denies a simple soul, is to be accepted: "*Thus much is true whatever farther things may be true.*" If ever the meaning of personal identity was in a cloud, it is so in the associationist description of it; and still "*it is to their imperishable glory to have taken so much of the meaning of personal identity out of the clouds.*"

There are two conclusions which must have forced themselves on every unbiased reader and which we wish to emphasize, namely: (1) There is more than Logic interested in the discussion of the *simplicity of the soul,* and (2) Our argument from the *perception of abiding personal identity* is left untouched by the attempts of modern psychologists to destroy or belittle its value; it is a *veritable stumbling-block in the path of materialism.*

Chapter VII

The Spirituality of the Human Soul. Rational Thought as Compared with Sense Perceptions: the Second Stumbling Block of Materialism

WE are now to consider the attribute of the soul which of all is the most radically opposed to materialism: its *spirituality*. True to the scholastic method we again first define the terms involved in the issue. We do so even though we have, in the course of the previous chapters, incidentally said all that is needed for a definition of "spirituality." And why? Because of the vagueness of term so prevalent in modern philosophy. More than one modern psychologist who professes what according to us comes under the name of *materialism* pure and simple, will explicitly disavow "materialistic" teaching. What such a disavowal amounts to will become clear in the course of our discussion.

Spirituality and Simplicity.

What, then, is the meaning of the term *spirituality,* and in what does it differ from *simplicity?* To put it in a few words: spirituality of the soul supposes simplicity of the soul and adds to this *intrinsic independence of the body.* This last expression, which contains the gist of the scholastic doctrine on this point, must not be construed loosely: it is a *technical term* to be understood in the sense which the scholastics attached to it.

Let it be noted, then, that simplicity and spirituality are not convertible terms. Every spiritual substance is indeed simple, but not conversely. Thus according to many scholastics the soul of brutes is simple, but no one ever granted that it was spiritual. Why not? Because, though simple, it is *intrinsically dependent on the body.* It has no functions except those which it can exercise in conjunction with the bodily organs. Even the highest psychic functions, of which a brute animal is capable, those of the *internal senses* (imagination, sensitive memory, etc.,) which play such an important part in instinctive activities, *all are organic functions.* All of them admit of *localization* in some cortical nerve-center.

Hence the entire being of the brute-soul is "immersed in the body." It is, in scholastic terminology, the "substantial form" of the animal body *and nothing else but that,* i. e., its whole *raison d'être* is to give life, vegetative and sensitive, to the body. This is implied when we say that the brute soul is *intrinsically dependent on the body.*

What we said of the organic nature of all *sensitive* functions is also true in man. The soul of man cannot exercise them except in conjunction with bodily organs. And if man were not capable of psychic activities *essentially* superior to the highest manifestations of sensitive life, we should conclude that the soul of man also, though simple, is not spiritual.

But man, as a matter of fact, is capable of such essentially superior psychic functions: *rational thought and free choice.* In these functions, as our arguments will show, *the soul is the only agent;* for they are not organic functions; they admit of no localization, unless we unduly extend the meaning of such terminology. For rational thought, as we have explained repeatedly, is preceded and accompanied by sensations,[1] and is thus *extrinsically*

[1] It is this fact, that namely all rational thought is preceded by sensations and invariably accompanied by representations of the imagination, at least of the verbal counterpart of thought,

dependent on the bodily organism, i. e., in this life *conditioned* by the functions of the organs of sensation.

Hence the human soul, though truly the "substantial form" of the body, since it is the last source of bodily life, is *not entirely immersed in the body.* Its *raison d'être* is not adequately expressed by this that it is to give life to the body. As its highest functions are in no sense functions of the body, the soul itself, though actually united to the body, is by its very nature *capable of existing and continuing rational life apart from the body.* This is what is meant by the soul's *intrinsic independence* of the body.

We can crystallize, then, the doctrine concerning the spirituality of the human soul in these two expressions, of which the first refers to the soul's *activity,* the other to its very *ex-*

that has given occasion to the modern doctrine that there is really no distinction between rational thought and sense perceptions. As many of our sensations, especially the representations of our imagination, are evidently composite in structure, the confounding of rational thought with sense perceptions gave rise to the fundamental assumption of modern psychology that, namely, all "our mental states are composite in structure, made up of smaller states conjoined" (James, Pr. of Psych. I, p. 145), and hence resolvable into these smaller states: *sensations or feelings.* It is of this assumption that James with his usual frankness says that, though "irresistibly attractive," "it is inwardly quite unintelligible. Of its unintelligibility, however, half the writers on psychology seem unaware" (l. c.). The purpose of this chapter is to challenge this assumption.

istence: (1) The highest activities of the soul are *not organic functions;* (2) the substantial source and subject of these activities can exist apart from the bodily organism: the soul by its very nature is *capable of immortality.* From this it will be seen that *spirituality* and *natural immortality* are synonymous terms. It must be remarked, however, that the term "*natural immortality*" is not used here in contradistinction to "supernatural" immortality, but denotes only that the soul is *by its very nature capable* of existing and continuing rational life apart from the body. Whether the human soul will be *actually immortal* is another question which is not within the scope of our present discussion.

Rational Thought, Compared with Sense Perceptions: The Second Stumbling-Block of Materialism.

How, then, do we prove the spirituality of the soul? Our first argument is drawn from the nature of rational thought as compared with sense perceptions.[2] Rational thought in

[2] This is what Prof. Wundt says of this distinction: "The idea that sensations and ideas are absolutely distinct conscious contents *belongs to the older spiritualistic psychology,* which taught that 'ideas,' as contradistinguished from the sensations evoked by physical stimuli, are purely mental processes, the prerogative of the mind itself. This spiritualistic distinction is, of course, *a pure product of metaphysical speculation, and survives at the present time only in a psychology of reflexion that has turned its back once and for all upon the facts of*

the strictest sense, i. e., reasoning proper, is a complex act which may be resolved into a series of judgments, and judgments in turn may be resolved into intellectual ideas. Hence from time immemorial three operations of our rational mind are distinguished (1) reasoning proper, (2) judgment, (3) intellectual ideas. Now the analysis of the latter, the simplest element of rational thought, suffices to show the *essential superiority* of rational thought over sensitive activity. A comparison of the two will make this clear.

To begin with the operations of our external senses which are admittedly organic functions. The noblest of the external senses, the *eye,* is capable of representing only *material* objects, and they must be *actively in contact* with our eye; and our vision *exactly corresponds* in quality and intensity to the normal stimulus from without, the waves of light striking the retina. Fechner's and Weber's laws need not detain us here; for the purposes of our pres-

psychical experience" (Pr. of Phys. Psych. Wundt-Titchener, Vol. I, p. 291 sq.). Cf. in this connection also Th. Ziehen, Phys. Psych., ed. 6, 1902, p. 198; and Prof. Titchener's Primer, p. 130.

In our subsequent comparison of rational thought with sense perceptions we are dealing with *facts of psychical experience,* and the unbiased reader may judge for himself whether it is the old or the new psychology which *" has turned its back once and for all upon the facts of psychical experience."*

ent discussion it is more important to point out with the scholastics that our visual representation is always of an *individual, concrete, material object according to its sensible qualities,* exhibiting, for instance, this house of this particular shape, with these particular colors, of this height, breadth, width, etc.

Our *imagination,* one of the *interior senses,* likewise admittedly of an organic nature, is more perfect in its representations; but the representations of our imagination, as for example the imaginary picture of a man, are essentially different from intellectual ideas which exhibit what is essential and common to a whole class, as for instance the *universal idea of man.* An imaginary picture of man, though ever so hazily formed, has always a definite shape. The picture may vary in the fleeting imagination, but at any given time the picture of a man has definite shape, color, dimensions, etc. We can imagine an object in a form in which we have never seen it, but this does not imply that our fancy is not actuated by the material stimulus coming from the objects that are about us. We may put together a fantastic picture of a man equipped with the wings of a bird and covered with the scales of a fish. Thus our fancy seems to have

a *creative power* which is independent of the existence of the material beings that enter into our fancy.

We are, as a matter of fact, in the habit of ascribing such creative power to poets and musicians, and some facts seem to corroborate this view. Homer has conjured up the most realistic pictures of heroes and their deeds which have ever since remained the most cherished possessions of the literary world; and still Homer is said to have been a *blind* poet. The immortal Beethoven wrote his greatest works, when he was *deaf;* the same is true of Robert Franz, the last of the great trio of song-writers.

Still, strictly speaking, our fancy has *no creative power,* because it can put together only the elements perceived by the exterior senses. Even the fertile imagination of Homer could not have created those heroes of his, if he had been born blind; and the musical genius of Beethoven would not have sufficed to conceive those soul-stirring tone-pictures of the Ninth Symphony with its apotheose of Joy ("Freude, schöner Götterfunken"), unless a wealth of music had entered his ears before his "fate began to knock."

The bald fact is that a man born blind can

never imagine colors; and a man born deaf can never "read" a musical score, even though he know all the technicalities of counter-point and orchestration; a fugue of Bach may afford him something of the thrill a mathematician feels when revelling in his numbers and numerical proportions; it may stand before him as a Gothic cathedral of lofty structure and wonderfully interlacing lines; but he cannot translate what he sees into the language of the musician. A man born deaf has indeed a fancy, but it can operate only with those elements which the other exterior senses of sight, touch, etc., have furnished.

Thus even our highest sensitive faculty depends on, and corresponds to, the *material action* of the objects which it represents; and these are always *individual, concrete things* and they are represented only according to their *sensible qualities.*

But our intellect is not thus restricted. We form intellectual ideas whose objects are in no wise material beings. We may represent intellectually a mathematical point which has no dimensions of any kind; but we cannot imagine a mathematical point. We may imagine what we call a point on a black board, but then we do not really imagine a mathe-

matical point: we imagine a comparatively big lump of chalk subject to three dimensions and of a definite color, whilst the intellectual idea of a mathematical point precisely ignores all dimensions and colors.

We can intellectually grasp abstract numbers, e. g., the number 3; but we cannot imagine abstract numbers. Our imagination may represent the written symbol 3, or the spoken word "three," or three material objects as, for instance, three apples; but we cannot imagine the abstract number 3, applicable as well to three apples as to three men, three horses, three square roots, three acts of virtue, three judgments, etc. But our intellect is capable of such an idea, and there is absolutely nothing hazy about this idea; it is absolutely defined and remains unchanged whether it be applied to apples, men, square roots, acts of virtue, judgments, or anything else.

Again, we form ideas like those of morality, unity, relation, predicate, dependence, causality, and millions of other abstract and universal objects of thought, not to forget *ens ut sic*, "being as such," the top-notch of mental abstraction. *Where is this realm of rational thought?* The objects that are within the

reach of eye and of all sensitive faculties are easily pointed out. But where is the realm of *abstract* and *universal* thought? [3]

Where is the realm of *mathematical* inquiry? Where is the object of thought the child of the primary school handles when rehearsing the multiplication table? Where is the square root of -1, the all-important thing in vector analysis? Where is the isosceles triangle,— not *this* or *that* isosceles triangle,— but *the* isosceles triangle, neither small nor large, the *universal* isosceles triangle, of which the Euclidian propositions treat?

Where is the realm of the metaphysician? He deals with the *universal and necessary,* not with the particular and contingent as it falls under our senses. Where is the object that

[3] *Abstract* and *universal* ideas are sometimes used as synonymous terms, because universal ideas are arrived at by "abstracting" or prescinding from individuating notes. Still, strictly speaking, and in scholastic terminology, they are not synonymous terms. *Abstract* ideas are opposed to *concrete* ideas (humanity, man; wisdom, wise, etc.,); *universal* ideas are opposed to *individual, particular, collective* and *transcendental ideas.* Thus man is a universal idea, Peter an individual idea, some man or men a particular idea, army a collective idea, being a transcendental idea. From these examples, even without entering upon strict definitions of all these terms (which may be found in any scholastic text-book of dialectics), it is sufficiently clear that *universal and abstract* ideas are not synonymous terms. The same is evidenced by the fact that both universal and individual ideas may be expressed either concretely or abstractly: man, humanity; God, Deity. *We argue here from both facts,* namely from the fact that we can express *universal* ideas, and from the fact that we can express things *abstractly.*

concerns him when discussing the transcendental principles of identity, contradiction, excluded middle, sufficient reason, or the highest principle of contingent beings: the all-important principle of causality? Where is the object of those concepts with which he is continually dealing, the universal concepts of cause, substance, life, animal, man, etc.? Where is the object of those abstract concepts which are his daily bread, the concepts of contingency, necessity, actuality, possibility, analogy, univocation, infinity, limitation, not to speak of "aseitas," "abaleitas," "perseitas," "inaleitas," and hundred other concepts equally remote from senses?

Where is the realm of ideas which form the subject of the moral philosopher's speculation? Where is the object of the idea of obligation, of justice, of right, of wrong, etc., etc.? They are neither mere phantoms of the mind nor mere words beating the air, they are most potent realities. But where is the realm of these realities?

Where is the object of thought which the logician so often expresses by the words *atqui* (but now) and *ergo* (therefore), expressing very definite relations of judgments? Are these really only words, and nothing else but

"words, words"? Suppose we connect with the sentence just finished the following: *Therefore* (ergo) some of the peptones, before dialyzed, are a deadly poison to the human organism. There is no one even if he be no dialectician by profession who would not be shocked by the incongruity of such language. Are we shocked by the proposition itself? No, it contains a truth. The only trouble with the proposition here is the *ergo* (*therefore*). Are we shocked only at the word: *ergo?* No, at other times the word is a veritable delight to us. The trouble here is that the proposition does not bear that relation to the preceding statement which the mind conceives and expresses by the verbal sign: *ergo*. The term *atqui* would be equally shocking; for the fact is that the two propositions thus connected stand neither in the relation of minor to major proposition, nor in that of conclusion to antecedent. There is, then, a real object in our mind when we use such terms, but *where* is it?

Where is the object of thought that each and every man, even though he be illiterate, expresses constantly when speaking of the most ordinary things of life: the object of the copula "*is*," which occurs in every sentence? What is signified by the little word "*is*" in the

proposition: Justice *is* a virtue? It expresses the objective identity of two ideas previously conceived and compared, as well as the conformity of the mind in affirming such identity. There is no difficulty in conceiving how the color and shape of the written letters "*is*" and "*atqui*" and "*ergo*" are within reach of the eye and imagination, but where is the object of thought denoted by these words?

A Word of Caution.

It may be well to caution the reader against a misinterpretation of our oft repeated question: *Where is the realm of rational thought?* In asking this question we do not mean to advocate idealism in any form: we are guilty neither of Hegelianism nor of Kantian transcendentalism. Though the objects of universal and abstract ideas do not exist *as such,* i. e., though their *universality* and *abstraction* does not exist in nature, still THAT WHICH universal and abstract ideas express exists or at least can exist, and even the loftiest of abstractions have a real foundation in nature. The objective value of universal ideas being properly understood in the sense of *moderate realism,* there is no difficulty in understanding the abso-

lute validity of universal and necessary judgments and of all rational thought in general. It is not within the scope of our present discussion to enter into such criteriological questions; for these we must refer the reader to scholastic text-books of critical logic. Supposing the doctrines there set forth, we meant only to emphasize that the objects of rational thought proper are *no material beings which could get into contact with any organic faculty;* and that hence, *rational thought is something essentially superior to sense perceptions and their associations.*[4]

[4] The distinction between rational thought and sense perceptions has of late years been made a subject of experimental research, which is quite a departure in experimental psychology; for heretofore all research work was restricted to the domain of sensations. It is impossible to review here the literature on the subject which has accumulated during the last decade. A critical account of it may be found in the latest publication on the subject by Mr. Thomas Verner Moore, entitled "The Process of Abstraction, An Experimental Study" (1910), and published under the auspices of the University of California (cf. l. c., pp. 76–115). The results of these experimental researches in general and of those of Mr. Moore in particular are a confirmation of the scholastic doctrine on this point.

Prof. Wundt severely criticises the methods employed in these experiments and is unwilling to admit the conclusions reached. He adheres to his denial of "concepts" or "ideas" in the scholastic or Aristotelian sense. It would be by far better, he thinks, to speak *of an unconscious substrate of ideas or even refer the total idea to this sphere of the unconscious* than to talk of "thoughts" and the revised Aristotelian concept of imageless ideas (cf. Moore, l. c. p. 105). This "unconscious substrate of ideas," if we understand Wundt rightly, would seem to be something akin to the "fringes" or "psychic overtones" of which James speaks and which will engage our attention later on in this chapter.

Whatever may have to be said concerning the methods em-

The Argument in Brief.

This premised, we may sum up what we have said so far in the following syllogism: Our intellect represents what is immaterial and universal. But an organic faculty cannot represent what is immaterial and universal; for it acts only in response, and proportionally, to a material impression from without. Therefore our intellect is not an organic faculty. In other words, *rational thought is intrinsically independent of any bodily organ.* The soul, therefore, the last source of rational thought, is intrinsically independent of any bodily organ; it is spiritual.

ployed in the experiments, especially in those of the Würzburg school, one thing is overwhelmingly evident: if Prof. Wundt's contentions concerning the nature of "thought" be right, then most of the words which we use continually, especially in philosophical discussions, are devoid of all meaning — they are really but "*words, words.*" This must be clear to every unbiased reader from our above comparison of rational thought with sense perceptions.

The current modern doctrine concerning rational thought, which is now beginning to be challenged by the exponents of experimental psychology, is in reality but a revised form of *nominalism* combated by the scholastics in the middle ages. We shall experience, therefore, in the 20th century a revival of the nominalistic controversy. For the experimental research in this field is absorbing more and more attention.

The German student will find a succinct account of the methods employed and the results achieved in this new field of experimental psychology in the excellent monograph of Dr. Jos. Geyser "Einführung in die Psychologie der Denkvorgänge," Paderborn, 1909.

Answers of Materialists.

Now what do materialists say of this argument? James, after disposing to his own satisfaction of the argument from the perception of personal identity, which we adduced for the simplicity of the soul, goes on to say:

"To the other arguments which would prove the need of a soul, we may also turn a deaf ear. The argument from free will can convince only those who believe in free will. . . . *The same is true of the argument from the kinds of things cognized.* Even if the brain could not cognize universals, immaterials, or its 'Self,' still the 'Thought' which we have relied upon in our account *is* not the brain, closely as it seems connected with it; and after all, *if the brain could cognize at all, one does not well see why it might not cognize one sort of thing as well as another.* The great difficulty is in seeing how a thing can cognize *anything.* This difficulty is not in the least removed by giving to the thing that cognizes, the name of Soul" (Pr. of Psych. I, p. 346 sqq.).

Waiving, for the present, James' attack on the argument from free will, there are several assertions of his which need some comment. He says: "If the *brain* could cognize at all, one does not well see why it might not cognize one sort of thing as well as another." In

other words: once you admit the "great psycho-physiological formula: Thought is a function of the brain," it is not a whit more difficult to conceive that the brain should cognize universals and immaterials, than that it should cognize at all. Now this is most assuredly true. But possibly there is something wrong with this great psycho-physiological formula, and after our detailed examination of that formula in chapter IV, we emphatically maintain that there is something very radically wrong with it. But of course it is a foregone conclusion that this great formula is true; "only a few belated scholastics, or possibly some crack-brained theosophist or psychical researcher can be found holding back," as James has informed us in his Ingersoll lecture (p. 9 sq.). Now after all we have said in chapter IV on this subject we have nothing to add and insist that the answer of James to our argument leaves it untouched.

"Fringes" of Sensations and "Psychic Overtones."

But before dismissing James' attack on our argument we must say a few words about the nature of *abstract* and *universal conceptions*, as James understands these terms, and we must let him explain the perception of such *imma-*

terial things as *logical relations.* For then we shall wonder no longer why he turns a deaf ear to our argument. Of course *all* thoughts are but associations of sense perceptions. But how, on this supposition, could we have such delicate shades of thought as are expressed by "*atqui*" and "*ergo*" in a syllogism, and by the copula "*is*" in every proposition, not to mention a host of other verbal skeletons by which we designate similar logical relations.

Perception of Logical Relations.

Well that is a hard task. This is what according to James the perception of such logical relations amounts to. They are but "*fringes*" connecting sensations; they are, as it were, "*psychic overtones*" in our "stream of thought." Here are James' own words:

"When we read such phrases as 'naught but,' 'either one or the other,' '*a* is *b*, but,' 'although it is, nevertheless,' 'it is an excluded middle, there is no *tertium quid,*' and a host of other verbal skeletons of *logical relation,* is it true that there is nothing more in our minds than the words themselves as they pass.[5] What then is the meaning of the

[5] Such would seem to be the view of Prof. Titchener; at least so we understand the following passage from his Primer: "The word 'thought' is used in various senses. We say, 'I can't think what his name is!' when we should say, in strictness, 'I can't remember.' And we say, 'I can't think how you

words, which we think we understand when we read? (p. 252).

"It is just like the 'overtones' in music. Different instruments give the 'same note,' but each in a different voice, because each gives more than that note, namely, various upper harmonics of it which differ from one instrument to another. They are not separately heard by the ear; they blend with the fundamental note, and suffuse it, and alter it; and *even so do the waxing and waning brain-processes at every moment blend with and suffuse and alter the psychic effect of the processes which are at their culminating point.* Let us use the words *psychic overtone, suffusion,* or *fringe,* to designate the influence of a faint brain process upon our thought as it makes it aware *of relations* and objects but dimly perceived" (p. 258).

To which one of his critics (Prof. Thos. Maguire of Dublin) wittily remarks, James ought to

"see that uniting sensations by their 'fringes' is more vague than to construct the universe out of oysters by platting their beards" (quoted l. c. p. 258, note).

could have done it!' when we should say, 'I can't imagine.' *Accurately defined, however, thought is the verbal counterpart of active imagination.* Active imagination is thinking in images; *thinking is active imagination carried on in words.* An account of the mechanism of thought will be nothing more, therefore, than the account of § 87, with *'words' substituted for 'images' in every case"* (Primer, p. 213 sq.).

The Harvard Professor protests that his critic has entirely misunderstood his "fringes":

> "This author considers that by the 'fringe' I mean some sort of psychic material by which sensations in themselves separate are made to cohere together. . . . But the fringe as I use the word, means nothing like this; it is part of the *object cognized*,— substantive *qualities* and *things* appearing to the mind in a *fringe of relations*. Some parts — the transitive parts — of our stream of thought cognize the relations rather than the things; but both the transitive and the substantive parts form one continuous stream, with no discrete 'sensations' in it such as Prof. Maguire supposes, and supposes me to suppose, to be there" (l. c. p. 258, note).

And now is the reader any the wiser for this explanation of the "fringes" as James understands them? The writer, for one, must confess that he is just as hopelessly in the dark as to how this makes the perception of *logical relations* intelligible as he was before the explanation.

In the name of common sense we must protest against such crude metaphysics and emphasize the impregnable position of the scholastics. Only if there is an indivisible unitary agent, is such a thing as the perception of logical relations possible. For such a perception is in

itself an indivisible act, of which no organic faculty is capable and which can on no account be conceived as a welding together of sensations. To perceive the relation between the subject and predicate in the simplest judgment, it is necessary that one and the same agent perceive the two terms of the relation, the ideas of subject and predicate. And when we perceive the relation denoted by "*atqui,*" two distinct judgments must be perceived simultaneously by one and the same indivisible agent. Suppose, for the sake of argument, judgment consists in a peculiar form of molecular vibration in some cortical centre. Molecule *a* being thrown into a very complicated form of vibration thinks "charity"; molecule *b* by moving somewhat differently, thinks "virtue." Now which of the two molecules is to put the two ideas together into the judgment: "Charity is a virtue"? Not molecule *a,* nor molecule *b,* and still less molecule *c;* for only he can affirmingly put two ideas together who has conceived both of them.

Nor does it help us at all to say with psycho-physical parallelists, that judgment is but an "*epiphenomenon*" of material vibrations, consisting of a few "sections in that stream of thought" running alongside the

workings of the "reflex machinery." For the same reasoning holds. If "section" *a* of the stream thinks "charity" and "section" *b* thinks "virtue," which "section" is to perceive the objective identity of the two ideas and form the judgment? Not "section" *a,* nor "section" *b;* for both are dead and gone. And "section" *c* is ignorant of both terms of the relation.[6]

It is refreshing to hear Lotze emphasize the value of our argument. He says:

"Any comparison of two ideas, which ends by our finding their contents like or unlike, presupposes the absolutely indivisible unity of that which compares them: it must be one and the same thing which first forms the idea of *a,* then that of *b,* and which at the same time is conscious of the nature and extent of the difference between them. Then again the various acts of comparing ideas and referring them to one another are themselves in

[6] James puts the argument thus against the adherents of the mind-stuff-theory and the associanists in general: "Take a sentence of a dozen words, and take twelve men and tell each one word. Then stand the men in a row or jam them in a bunch, and let each think of his word as intently as he will; nowhere will there be a consciousness of the whole sentence" (Pr. of Psych. I, p. 160). It is strange that James did not see, or was not willing to acknowledge, that this very illustration, in fact all his arguments against the mind-stuff-theory and the associanists in general, can with equal right be retorted upon him. James' own account of mental phenomena is but a special form of the current associanists' doctrine, as is clear from our last chapter. Cf. in this connection also Höfler (Psych., pp. 177, 178), who insists that judgment and reasoning cannot be explained by mere association.

turn reciprocally related; and this relation brings a new activity of comparison to consciousness. And so our whole inner world of thoughts is built up; *not as a mere collection of manifold ideas"* (and, we add, still less of sensations) "existing with or after one another, but as a world in which these individual members are held together and arranged by the *relating activity of this single pervading principle.* This then is what we mean by the *unity of consciousness,* and it is this that we regard as the sufficient ground for assuming an *indivisible soul"* (Metaph. book III, Chap. I, n. 241, Vol. II, p. 170 sq.).[7]

The "Fringes" of James Again — Abstracts and Universals.

The "fringes" of James play an all-important part in his explanation of *abstract* and *universal* conceptions. He says:

"Our doctrine, therefore, of the 'fringe' leads to a perfectly satisfactory decision of the nominalistic and conceptualistic controversy, so far as it touches psychology. We must decide in favor of the conceptualists" (l. c. p. 472).

On the next page we read:

[7] An excellent criticism of the sensational psychology of Condillac, which applies with equal justice to the entire empirical school, may be found in "Fundamental Philosophy" of the great Spanish philosopher Balmes (l. c., Vol. II, book IV). Fr. Maher's Psychology (ed. 4) contains some extracts of the work (l. c. p. 242 sq.); chapter XII of Fr. Maher's work is one of the best presentations of the whole subject which we have in the English language (l. c. p. 228 sq.).

"After abstractions, universals! The 'fringe,' which lets us believe in the one, lets us believe in the other too. . . . We can give no more definite account of this vague consciousness than has been given on pp. 249–266" (l. c. p. 473 sqq.).

We have quoted above from these very pages here referred to. As James cannot make these all-important "fringes," on which his doctrine concerning the universals hinges, any clearer to us, we now unceremoniously dismiss them and say: *Quousque tandem abutere patientia nostra!*

Disclaimers of Materialism.

There is another phrase in James' answer to our argument, which needs special comment, and which more than anything else is calculated to take the very backbone out of it. Alluding to his "stream of thought theory" according to which each passing Thought is the thinker, and hence privileged for the time being to be spelled with a capital T (Pr. of Psych. I, p. 338), the Harvard Professor makes the following surprising statement: "the 'Thought' which we have relied upon in our account *is* not the brain, closely as it seems connected with it" (l. c. p. 346). This sounds pretty much as if he said: after all, my doctrine does

not imply that thought is something *material.*

The same paragraph contains an even more explicit disclaimer of materialism. In his answer to the argument from free will (which we have not quoted in its entirety above), he says, that even if free will be admitted, and if it really calls for a *spiritual* agent, his stream of thought theory satisfies that demand; for this "Thought" is *"a temporary spiritual agent,"* which frees him from the incongruities of materialism just as well as *"a permanent one like the supposed soul"* (l. c.).

How are we to understand these passages? They bring us back to a remark which we made in the beginning of this chapter. There we said that more than one modern psychologist, who professes what according to us comes under the name of *materialism* pure and simple, will explicitly disavow *"materialistic"* teaching. To quote only one more passage from the Harvard Professor.

In his Ingersoll lecture on "Human Immortality," though true to his "psycho-physical formula: Thought is a function of the brain," James explicitly rejects what he styles "the theory of production or *materialistic theory"* (l. c. p. 54), and decides in favor of the "transmission theory," which we have ex-

plained in his very words in a former chapter (cf. p. 17 sq.). Thus the Harvard Professor is enabled to perform the remarkable feat of defending even human *immortality without a soul.*

One Clue to the Situation.

How are we to explain this rejection of materialism by a materialist without construing it into an admission of a spiritual soul? The following note from his "Principles of Psychology" (Vol. I, p. 24), added by way of apology to his chapter on "The Functions of the Brain" will explain itself and contains at least *one clue* to the situation. We read:

"I hope that the reader will take no umbrage at my so mixing the physical and mental, and talking of reflex acts and hemispheres and reminiscences in the same breath, as if they were homogeneous quantities and factors of one causal chain. I have done so deliberately; for although I admit that from the radically physical point of view it is easy to conceive of the chain of events amongst the cells and fibres as complete in itself, and that whilst so conceiving it one need make no mention of 'ideas,' I yet suspect that point of view of being an unreal abstraction. Reflexes in centres may take place even where accompanying feelings or ideas guide them. In another chapter I shall try to show reasons for not abandoning this common sense

position; meanwhile language lends itself so much more easily to the mixed way of describing, that I will continue to employ the latter" (l. c. p. 24, note).

As a matter of fact James does continue to employ this "mixed way" of describing mental phenomena, and it is well to remember that he does so "deliberately." But "mixing" things, especially in philosophical treatises is liable to become irritating, more especially, when there is an important point at issue. Hence it is that after indulging for one hundred pages more in "mixing the physical and mental," James himself feels that he owes the reader a more substantial apology. The whole chapter on the "Automaton Theory" contains such an apology to the "dissatisfied" reader. He starts out then by saying that others are just as bad as he is in this regard. At least so we translate that portion of the following passage which we italicize:

"In describing the functions of the hemispheres a short way back, we used language derived from both the bodily and the mental life, . . . treating his hemispheres sometimes as the seat of memory and ideas in the psychic sense and sometimes talking of them as simply a complicated addition to his reflex machinery. *This sort of vacillation*

in the point of view is a fatal incident of all ordinary talk about these questions; but I must now settle my scores with those readers to whom I already dropped a word in passing (see p. 24, note) and who have probably been dissatisfied with my conduct ever since" (James, Pr. of Psych. I, p. 128).

Readers acquainted with modern psychological discussions will recognize at once that this "automaton theory" is but another name for the theory of "*psycho-physical parallelism,*" which James is willing to admit as a working hypothesis (l. c. p. 144; cf. also p. 182). But "pending metaphysical reconstructions not yet successfully achieved," he, once again, carries on both shoulders and decides in favor of what he styles the "common sense" view, otherwise better known as the theory of "*psycho-physical interaction*" (l. c. p. 144).

For readers not acquainted with such modern problems, it may be well to give a more detailed account of the two theories referred to. In describing them we use deliberately the term "*mind*" and not "*soul,*" because the former lends itself so much the more easily to such a description.

The Theory of Psycho-Physical Interaction.

Well, then, the "theory of *psycho-physical interaction*" maintains, that "*mind*" acts on matter and matter in turn on mind; but this is explained differently by different authors. How James understands this "interaction," he explains to us in his Ingersoll lecture already referred to several times in the course of our discussion. The reader may remember that "it thinks" all around us; the brain has nothing else to do but to "transmit" beams of the "infinite thought" and to give it that tinge which we are liable to call personal thought; in a word: there is no transformation of physical into "psychical energy"; the physical activity of the brain only "releases" the "psychical energy" already present, much as the turning of the electrical key does not convey but only releases the potential energy stored up in the conducting wires which now is manifested by the incandescence of the lamp. After these explanations not much is left of James' disclaimer of "the *materialistic* theory"; we have — once again — been "duped by words."

The Theory of Psycho-Physical Parallelism.

The theory of "*psycho-physical parallelism,*" stated in its merest outlines, maintains that "mind" and "matter" do not interact, but that "mental processes" simply run *parallel* to "material processes." The full significance of this parallelism and the paradoxical conclusions to which it leads we shall consider in another place. For the present we are mainly concerned with the disclaimers of materialism on the part of psycho-physical parallelists. To begin with, these disclaimers are understood to fit into the great psycho-physical formula: Thought is a function of the brain; in fact they are to be understood in such a way, that man is in very truth but a *conscious automaton.*

If thought really is a function of the brain, then the most natural thing to say is for instance with Büchner:

"Thinking must be regarded as a *special mode of general natural motion,* which is characteristic of the substance of the central nervous elements as the motion of contraction is of the nerve-substance,* or the motion of light is of the universal ether" (quoted by James, Hum. Immort., p. 56).

* *Muscle*-substance? Nerves do not contract. There must be a typographical error in the passage as quoted by James.

or with Percival Lowell:

"When we have, as we say, an idea, what happens inside of us is probably something like this: the neural current of molecular change passes up the nerves, and through the ganglia reaches at last the cortical cells. . . . When it reaches the cortical cells, it finds a set of molecules which are not so accustomed to this special change. The current encounters resistance, and in overcoming this resistance it causes the cells to glow. The *white-heating* of the cells we call consciousness. Consciousness, in short, is probably *nerve-glow*" (quoted l. c. p. 57 sq.).

or with Herbert Spencer:

"The law of metamorphosis, which holds among the physical forces, holds equally between them and the mental forces" (quoted l. c. p. 56).

Such descriptions of mental phenomena are what we should expect from all adversaries of a spiritual soul; and still such "*materialistic*" conceptions are commonly rejected by the defenders of "psycho-physical parallelism." To most readers the following passage from Prof. Wundt's *Principles of Physiological Psychology* will come as a distinct surprise. Speaking of descriptions of mental phenomena in terms of physical energies, like those above quoted, Prof. Wundt says:

"The attempt fails at once, under whatever guise it may be made. Psychical processes refuse to submit to any one of our physical measures of energy; and the physical molecular processes, so far as we are able to follow them, are seen to be transformed, variously enough, into one another, but never directly into psychical qualities" (l. c. in the translation of Prof. Titchener, p. 102).

Prof. Titchener in his Outlines informs us:

"It may be said, without qualification, that *materialism* is no longer current as a metaphysical theory" (l. c. p. 365).[8]

It would be easy to quote passages from other materialists which by the unwary reader might be easily construed to imply something like the "*spirituality of the soul.*" Where is the key to this situation?

The Real Key to the Situation.

The key is *the denial of the substantiality of the soul,* or *mind,* as modern psychologists preferably express it. One of the most boasted achievements of modern psychology is that it has come to consider *mind* as a *function* or a *process* in opposition to the old scholastic view which considered mind as a *substance* having

[8] A similar disclaimer of materialism may be found in his Primer, p. 17 sq.

mental functions or processes. This was one of the first lessons inculcated by Prof. Titchener in his Primer, as the reader may remember from our third chapter (p. 66 sq.). Prof. Wundt, who seems to be less irritated by the unscientific term "*soul,*" than are some of his materialistic colleagues, puts the same a little differently. He says that whilst in the old "mythological" conception the *soul* was a *substance,* the beginning of the "*scientific*" era dates from the time when this was discarded and replaced by "die *aktuelle* Seele" (actual soul), i. e., the soul as a "function" (Gr. der Psychologie, ed. 5, III, p. 758, sq.).

The reader who has not yet reached this stage of "scientific" development, may naïvely ask: "a function *of what?*" Well, there he is in the old rut of "mythological" days again. "O si tacuisses, philosophus mansisses!" You see, mind is a "*function,*" not of this or that; no, it is just a *function.* That's all. Or, if you insist that it is a function of something, it is a function of *matter,* or — to be quite precise — it is a *by-product* of the reflex machinery: an *epiphenomenon* — that's the word.

Mind an EPIPHENOMENON.
The Most Polite Way of Bowing Out Spirituality.

"Mind an *epiphenomenon* of the reflex machinery!" The beauty of this conception consists in this that, on the one hand, you insist that thought is nothing material, thus avoiding the opprobrium of "materialism," and on the other hand you insist that, as far as explanations are concerned, "*matter shall hold all the power.*" It is the most polite way of bowing out spirituality.

James, though an "interactionist," admits, as stated above, "parallelism" as a working hypothesis. Commenting on a passage of Chas. Mercier which emphasizes the difficulties confronting the interactionists, he says:

"Combined with a strong sense of the 'chasm' between the two worlds" (i. e., the mental and material), "and *with a lively faith in the reflex machinery,* the sense of this difficulty can hardly fail to make one turn consciousness out of the door *as a superfluity so far as one's explanations go.* One may *bow her out politely, allow her to remain as an 'epiphenomenon'* (*invaluable word!*), but one insists that *matter shall hold all the power*" (Pr. of Psych. I, p. 135).

Mind a SUPERFLUOUS APPENDAGE of the REFLEX MACHINERY.

As psycho-physical parallelism is now universally accepted by psychologists as a working hypothesis, we must needs explain more fully the "invaluable word" which crystallizes the doctrine. What, then, is meant by this *epiphenomenon?* We quote from James.

"The conception of reflex action is surely one of the best conquests of physiological theory; why not be radical with it? Why not say that just as the spinal cord is a machine with few reflexes, so the hemispheres are a machine with many, and that that is all the difference? The principle of continuity would press us to accept this view.

"But what on this view could be the function of the consciousness itself? *Mechanical* function it would have none. The sense-organs would awaken the brain-cells; these would awaken each other in rational and orderly sequence, until the time for action came; and then the last brain-vibration would discharge downward into the motor tracts. But this would be a quite autonomous chain of occurrences, and whatever mind went with it would be there only as an '*epiphenomenon,*' an *inert spectator,* a sort of '*foam, aura, or melody,*' as Mr. Hodgson says, whose opposition or whose furtherance would be alike powerless over the occurrences themselves" (Pr. of Psych. I, p. 129).

The Naïve Way, and the Scientific Way of Explaining Things.

On this supposition, then, we should not say that we are guided in our outward actions by considerations or motives — they do not enter into the chain of causality at all; mind is but an *"inert spectator,"* an *"epiphenomenon"* which neither causes nor impedes our outward actions — we should rather say that our actions are due to *"paths left in the hemispherical cortex by former currents"* (l. c.). Going to dinner, taking a walk on a beautiful spring day, giving alms to a poor man in dire distress, all these and similar actions were — in the olden days — considered actions prompted by motives. Well, of course, we must not be too hard on our brethren of prescientific days; they did not know any better. The great principle of *psycho-physical parallelism* was not yet known. Now we know that *mind* is but an *epiphenomenon,* a by-product of the reflex machinery, *a useless appendage of the reflex machinery.*[9] The won-

[9] James thus states the paradox contained in this doctrine: "To comprehend completely the consequences of the dogma so confidently enunciated, one should unflinchingly apply it to the most complicated examples. The movements of our tongues and pens, the flashings of our eyes in conversation, are of course events of a material order, and as such their causal antecedents must be exclusively material. *If we knew thor-*

der is only that *natural selection laid hold of such a useless appendage.*

A Most Peculiar Vagary of Natural Selection.

By right natural selection singles out the fittest. But this useless appendage, *mind,* is as far as scientific explanation of everything in nature is concerned, a non-entity. This is what Prof. Titchener says on this peculiar point of natural selection:

"How (he asks) could mind have been developed, *how could 'natural selection' have laid hold of it,* if it were not of some practical benefit to the organism? . . . To which we may reply: it need not be the mind which is useful to the organ-

oughly the nervous system of Shakespeare, and as thoroughly all his environing conditions, *we should be able to show why at a certain period of his life his hand came to trace on certain sheets of paper those crabbed little black marks which we for shortness' sake call the manuscript of Hamlet. We should understand the rationale of every erasure and alteration therein, and we should understand all this without in the slightest degree acknowledging the existence of the thoughts in Shakespeare's mind.* The words and sentences would be taken, not as signs of anything beyond themselves, but as little outward facts, pure and simple. *In like manner we might exhaustively write the biography of those two hundred pounds, more or less, of warmish albuminoid matter called Martin Luther, without ever implying that it felt"* (Pr. of Psych. I, p. 132 sq.).

And still James holds to this theory as a *working hypothesis.* Others, however, are more radical. Thus Clifford discussing the same subject says: "If anybody says that the will influences matter, *the statement is not untrue, but it is nonsense"* (Body and Mind, cf. Lectures and Essays, p. 262). How Paulsen and Lange state the paradox — and uphold the doctrine of psycho-physical parallelism in spite of it — may be seen from quotations given by Prof. Höfler (Psychologie, p. 51, note).

ism, but *the brain* upon which mind is conditioned. I may run to catch the train, not because I know I am late, but because my brain is the scene of an excitatory process underlying this idea of lateness. A man may succeed in life not because he has a superior mind, but because he has a superior brain, i. e., a superior substrate of mind. Mind itself may be simply the *efflorescence of brain-activity,* an invariable concomitant and *valid index of brain-value,* but itself only an '*epiphenomenon,*' a symptom and not a cause" (Outlines, p. 361).

The Double-Aspect Theory.

One word more on the disclaimers of materialism on the part of psycho-physical parallelists, and we shall have reduced them to absolute zero. We must explain the *double-aspect theory* which supplements that of psycho-physical parallelism. Fechner, the father of modern *psycho-physics,* has excogitated an illustration which is now common property:[10] we shall give it in the words of Prof. Titchener who has added a tinge of poetry to it.

MIND to BODY as the CONCAVE to the CONVEX in a Circle.

"Think of a princess, confined within a magic circle, and of an adventurous prince who attempts

[10] Fechner, Elemente der Psychophysik, ed. 2. Leipzig, 1889, Vol. I, p. 2 sq.

her deliverance. Prisoner and rescuer are separated by an enchanted barrier,— separated, of course, by *one and the same bàrrier.* But the princess can see only the inside, the concavity, of the circle; the prince can see nothing but its outside, its convexity. The magician, looking down from above, sees the whole circle, concave-convex and convex-concave. Now the theory of *psychophysical parallelism* declares that the relation of mind to body is the relation of concave to convex in the circle. If we are working in psychology, our world is concave; any change in the world is simply a change of concavity. If we are working in natural science, our world is convex; any change in it is simply a change in convexity. Really, however, every change on the one side runs parallel to a corresponding change on the other: concavity cannot alter without alteration of convexity, and *vice versa.* Only the investigator must be either princess or prince; he cannot be magician" (l. c. p. 362 sq.).

Parallelism Reduced to Identity.

There is, then, nothing left of the disclaimers of materialism. Spiritual thought and material processes are but two aspects of *one and the same reality: matter.* "Psychosis" is to "neurosis" as the "concave" to the "convex" in *one and the same circle.* Hence *rational thought* is as truly a *property of matter* as concavity is a property of a circle.

Thus the theory of psycho-physical *parallelism* develops into the theory of *identity*. Ebbinghaus in his "Grundzüge der Psychologie" expresses this very clearly, and he insists on this *identity* before proposing Fechner's illustration of *parallelism*. In translating the following passage we render "geistig" by "spiritual" and "Seele" by "Soul," though more euphonious terms could no doubt be found and would fit better into the context. But the fact is, Ebbinghaus uses these unscientific terms; they preserve a tinge of *pseudo-spirituality*. We read:

"Spiritual functions and brain processes . . . can in no way be thought of as two separate factors (Parteien), which interact and thus determine the changes in each other. But if they are not two factors and still are intimately connected, nothing remains but *that they are at root one and the same thing*. The most natural and first formula for expressing the relation between *brain* and *soul* is indeed *interaction*, the last and highest formula to which a more thorough study of the problem has always led, is *identity*. The *spiritual* and the *neural* are in truth but *one reality* which on account of peculiar complications is manifested in these two ways; such is the final verdict of almost all philosophers" (l. c. p. 37).

Clinching the Argument.

To come back, then, to our argument. *Brute* "materialism" of the Büchner type can admittedly not answer it. To evade its force a sort of *pseudo-spirituality* was devised, the principal type of which is *psycho-physical parallelism.* But all these devices have ended in the declaration of *identity of brain and soul,* i. e., in a return to the materialism of the Büchner type, ill disguised at best by the illustration of *concavity* and *convexity of the same circle.* Hence our argument, as it remained untouched by the answers of *hard* materialism, remains equally untouched by those of *soft* materialism, not to speak of the *paradoxes* which must be taken into the bargain. All of these answers have but emphasized the fact that *rational thought as compared to sense perception* is in very truth *a stumbling block to materialism.*

Chapter VII

The Spirituality of the Soul. Perfect Psychological Reflexion: The Third Stumbling Block of Materialism

BEFORE proceeding in our discussion it may be well to review the work thus far accomplished. The denial of the *substantiality* of the human soul was the proton pseudos of modern psychology, as we have seen in chapter III. In chapter IV we examined the very bulwark of materialism, viz., the most recent advances in physiology; and we saw that they fit without the least trouble into the scholastic doctrine. Materialism has failed to make good its contention. In chapter V we discussed the scholastic argument drawn from the *perception of personal identity* and thus we established the *simplicity* of the human soul. In chapter VI we considered the scholastic presentation of the nature of *rational thought* as compared with *sense perception,* which is the first of the

arguments for the *spirituality* of the human soul. The answers of modern psychologists to these time-honored arguments only emphasized the fact that they are stumbling blocks in the path of materialistic philosophy.

Next in order is the argument taken from a common experience with which we all are perfectly familiar but which, when carefully considered, must be classed among the most wonderful phenomena in nature. We refer to the fact that the human mind possesses the power of *perfect psychological reflexion,* and this constitutes the *third stumbling block of materialism.*

The Fact of Perfect Psychological Reflexion.

When I think of any subject, say the Pythagorean proposition, and deduce its proof, I am able to observe and study my own thoughts, I can make the reasoning process and my own reasoning *Ego* the *object of my study.* The marvellous part of this introspective activity of our mind is the *perfect identity* of the thinking *subject and object of thought.* The Ego thinking on, and reasoning out, the Pythagorean proposition becomes the object of observation on the part of the same Ego. This power of introspection is one of the main

sources of rational psychology and the *conditio sine qua non* of empirical psychology, as even Prof. Wundt is obliged to admit (Pr. of Phys. Psych. I, p. 7).[1] It is moreover a necessary requisite for a scientific knowledge of logic. If we did not possess this power of perfect psychological reflexion, we should know nothing about mental processes, as for instance, that of reasoning. I cannot look into the minds of others; I must observe that mental process in myself.

Now this mental phenomenon finds no analogon in the realm of the material world; nay more, it is in direct opposition to the known properties of matter. For anything material is composed of various parts which may be conceived to influence one another. Molecules, atoms, electrons, may communicate to one another various motions which may be rightly or wrongly identified with the different forms of material energy. But that an atom act upon itself, is repugnant to the known nature of matter. Yet every hypothesis, making the brain the organ of introspective

[1] Prof. Baldwin rightly says: "The scientific observation of mind . . . demands *the turning back of the powers of thought and reason upon our immediate knowledge for its examination, testing, systematization.* . . . By reflection, therefore, *consciousness itself becomes a matter of consciousness*" (Handbook of Psychology, 1890, p. 9 sq.).

thought, meets precisely with the difficulty just mentioned.

Soft Materialism Again.

If the materialist's description of rational thought is right, it must, in its last analysis, be "a mode of motion." It is true that the "materialistic theory seldom ventures to formulate itself very distinctly" (Hum. Immort. p. 54), and, as we have seen in the last chapter, many are the devices used to cover the crudeness of the "great psycho-physical formula: Thought is a function of the brain." "Psycho-physical parallelists" so soften down materialism that they assert and deny it in the same breath. "Interactionists" of the type of James are no better. Materialism, if consistent, must say that "neurosis" *is* "psychosis"; the softest of materialism, psycho-physical parallelism, in its last analysis comes down to this: it ends in the *theory of identity*. Fechner's illustration of the inside and outside of the same circle is only hiding the "paroxysmal unintelligibilities" of this identity.

A Dialectical Device.

It is important to note that psycho-physical parallelists use at times the identical language

of the scholastics, when stating the relation between rational thought and the material operations of the brain. Thus, for instance, Prof. Titchener insists that the brain is not the *cause,* but only the *condition* of mental phenomena (Primer, p. 18). He insists, further, that the statement of these conditions "furnishes us with the *scientific explanation* of the mental processes"; for this is meant by "scientific explanation," as he goes on to illustrate by examples from physics and geology (l. c.).

But we must protest against such a restriction of the term "science." Science must indeed coördinate facts or indicate the conditions for the occurrence of natural phenomena; this, however, is not all that "scientific explanation" means. In accordance with the natural and irresistible impulse of our rational minds science inquires essentially into the *causes* of things, as we have explained in the second chapter. Thus, for instance, "the formation of dew" is not explained, as long as we do not indicate the *causes* of its formation, and the same holds true of mental phenomena. *Or have they really no cause?* Prof. Titchener, then, by saying that the *body* is *not the cause,* and by waiving the question

what really is the cause of mental phenomena is only using a dialectical device to cover the real point at issue.

Facing the Unavoidable Question.

We must, then, face the question as to the *cause* of rational thought. To say, however, with James, that

"as in the night all cats are gray, so in the darkness of metaphysical criticism all causes are obscure" (l. c. I, p. 137) [2]

may be a convenient way of gliding pleasantly over the difficulty, but the serious student will not be satisfied with a witticism. The only way out of the difficulty is to do away with that great formula which has cast the shades of night on the whole question. And to use

[2] James here, in mooting the doubts of Hume concerning the knowability of causes in general, is *directly* concerned with the question whether *ideas themselves are causes*, i. e., whether by them we exercise any control over our bodily movements. "It is truly enough hard (he says) to imagine the 'idea of a beef-steak binding two molecules together'; *but since Hume's time it has been equally hard to imagine* ANYTHING *binding them together. The whole notion of 'binding' is a mystery, the first step towards the solution of which is to clear scholastic rubbish out of the way*" (l. c. p. 136). Of course, these doubts of Hume, if applied to our question as to the *cause of rational thought*, offer a convenient retreat into the prohibition-territory of *agnosticism*, where all such problems *are* cleared away as "scholastic rubbish" and cease from troubling: *Ignoramus et ignorabimus*. Cf. in this connection James' lecture on "Human Immortality," p. 21.

the "mixed way" of describing the origin of mental phenomena, as we have seen James forced to do, may be good enough for physiological psychology, but it will never do for "rational" psychology.

The bald fact is, that the only logical and consistent way of interpreting the great psycho-physical formula of materialists, is that of Huxley and Büchner: Thought *is* "a mode of motion." Consequently, to have such a thing as *self*-knowledge or *perfect psychological reflexion,* we must conceive of one and the same portion of matter as acting upon itself. For then only the very portion of the brain which is supposed to be the *subject* of introspective thought, is at the same time the *object* soliciting the thought. The difficulty, then, which perfect psychological reflexion offers to materialists, is the same which a man would experience, if he tried to lift himself by the straps of his boots.

The Climax of a Fairy Tale.

A fairy tale tells of a knight who was beheaded by his victorious foe. But, strange to relate, the vanquished knight rose to his feet, seized his severed head and bore it off, as in triumph. The most remarkable part, how-

ever, of the story is, that with a last effort of gallantry he took his own head, and — *kissed its brow.* The climax of this fairy tale is no more absurd than the assumption that a material organ can know itself and philosophize on itself. Only if we admit with the scholastics a simple soul intrinsically independent of any bodily organism, can we explain the possibility of perfect psychological reflexion.

Formulating the Argument.

To give our argument the outward garment of a syllogism, as it would pass muster in a scholastic "circle" or seminar, we should put it as follows: The subject of rational thought in man is capable of perfect psychological reflexion. But perfect psychological reflexion can be explained only, if the subject of rational thought is a simple being intrinsically independent of a material organ, i. e., if the soul of man is spiritual. Therefore the subject of rational thought in man is a simple being intrinsically independent of a material organ, i. e., the soul of man is spiritual.

Answers of Materialists to the Argument.

Now what have materialists to say to the argument? To evade it, *all* have recourse to

the "proton pseudos" of modern psychology: the *denial of a substantial subject of thought.* But of that we have said enough in our third chapter; and the reader may realize now, why it was that we put so much stress on the subject.

The Objection of Herbert Spencer.

Some have ventured an even more radical solution of the difficulty which confronts them. Though "*self*-consciousness" or perfect psychological reflexion is such a patent fact, it has been denied on the plea of its impossibility. Thus Herbert Spencer in his Principles of Psychology dogmatically asserts: "*A thing cannot at the same time be both subject and object of thought*" (l. c. I, p. 148). But the English philosopher unwittingly only confirms our argument. For he knows of nothing substantial but matter;[3] hence his proposition

[3] The whole chapter from which the above quotation is taken is devoted to the denial of the substantiality of mind. According to Spencer "mind" must, in its last analysis, be classed among the phenomena of *Isomerism* or *Allotropism.* We read: "If, then, we see that by unlike arrangements of like units, all the forms of Matter, apparently so diverse in nature, may be produced — if, even without assuming that the so-called elements are compound, we remember how from a few of these there may arise by transformation and by combination numerous seemingly-simple substances, strongly contrasted with their constituents and with one another; we shall the better conceive the possibility that the multitudinous forms of Mind known as different feelings may be composed of simpler units of feeling and even of units fundamentally of one kind. We shall perceive that such homogeneous units of feeling may, by

really means: a *material* thing cannot at the same time be both subject and object of thought. To which we perfectly agree. But as the fact of perfect psychological reflexion is too patent to be denied or even questioned, we draw the inference: Therefore the subject of perfect psychological reflexion is no material thing, i. e., it must be a simple, immaterial, or spiritual substance.

The Difficulty of James.

James not only denies perfect psychological reflexion or the fact of *self*-consciousness, as we take it and as it is forced upon every man of "common sense," but he holds that not even the "passing Thought" is aware of

integration in diverse ways, give origin to different though relatively-simple feelings; by combination of which with one another more complex and more unlike feelings may arise; and so on continuously."

"Here, indeed, it may be added that *something beyond analogy may perhaps exist between the methods of material and mental evolution.* When we recall the fact that molecules are never at rest, and that by carrying their individual rhythmical motions into the compound molecules formed of them, they produce compound rhythms — *when we recollect the extreme complexity of the molecules of nervous matter, and imagine how various and involved must be the rhythms of which they are the seats — when, further, we infer the countless modifications of rhythms that must under such conditions become possible; we shall dimly see a fitness of molecular structure for originating, and being affected by, the diversities and complications of molecular pulses above described. We shall suspect that there may be here a further correspondence between a known cause of physical heterogeneity and the supposed cause of psychical heterogeneity"* (The Principles of Psychology, Vol. I. part II, chapter I. "The Substance of Mind," p. 155 sq.).

itself. The present "section of the stream," i. e., the present Thought (with a capital T), knows indeed and "appropriates" all the sections that went before, but it knows and appropriates them *without knowing itself* (Pr. of Psych., I, p. 340). Hence the present section of the stream is *the darkest in the whole series* (l. c. p. 341). We wonder where the light comes in, since the past Thoughts or "sections" are "dead and gone," and the future sections are not yet born. It is for this reason that our mental life,— if it comes to scientific accuracy of expression,— is not even a series of *con*sciousnesses, as most modern psychologists put it, but, as the reader may remember from our first chapter (p. 31), rather a series of *"sciousnesses"* pure and simple. The beheading of the word "con-sciousness" is to indicate that the present Thought never knows itself, whilst "appropriating" the sections that are dead and gone. We read:

"The Thought never is an object in its own hands, it never appropriates or disowns itself. It appropriates *to* itself, it is the actual focus of accretion, the hook from which the chain of past selves dangles, planted firmly in the present, which alone passes for real, and thus keeping the chain from being a purely ideal thing. Anon the hook itself

will drop into the past with all it carries, and then be treated as an object and appropriated by a new Thought in the new present which will serve as a living hook in turn. The present moment of consciousness is thus, as Mr. Hodgson says, the darkest in the whole series. It may feel its own immediate existence — we have all along admitted the possibility of this, hard as it is by direct introspection to ascertain the fact — but nothing can be known *about* it till it be dead and gone" (l. c. p. 340 sq.).

Our argument must indeed be a stronghold, if modern philosophy must run riot in order to belittle its value. After all we have said in the third and fifth chapters on this subject, we have absolutely nothing to add by way of comment or criticism.

Hume's Attack on Our Argument.

It may be well to consider here Hume's objection to our argument, not only because he is the father of all modern skepticism, but especially because we are thus enabled to remove a misunderstanding, frequently met with in modern psychological works, concerning the fact of perfect psychological reflexion. We read:

"There are some philosophers who imagine we are every moment intimately conscious of what we

call our Self; that we feel its existence and its continuance in existence, and are certain, beyond the evidence of a demonstration, both of its perfect identity and simplicity. . . . Unluckily all these positive assertions are contrary to that very experience which is pleaded for them, nor have we any idea of Self, after the manner it is here explained. . . . For my part, when I enter most intimately into what I call *myself,* I always stumble on some particular perception or other of heat or cold, light or shade, love or hatred, pain or pleasure. I never catch *myself* at any time without a perception, and never can observe anything but the perception. . . . If any one, upon serious and unprejudiced reflection, thinks he has a different notion of *himself,* I must confess I can reason no longer with him. All I can allow him is, that he may be in the right as well as I, and that we are essentially different in this particular. He may, perhaps, perceive something simple and continued which he calls *himself;* though I am certain there is no such principle in me. But setting aside some metaphysicians of this kind, I may venture to affirm of the rest of mankind that they are *nothing but a bundle or collection of different perceptions,* which succeed each other with an inconceivable rapidity, and are in a perpetual flux and movement" (quoted by James, l. c. p. 351).

It is true that "when I enter most intimately into what I call *myself,*" i. e., in the act of psychological reflexion, "I always stumble on some particular perception or other, of heat or

cold, love or hatred, pain or pleasure." Scholastics expressed the same fact by saying that through psychological reflexion we never perceive the Ego *except in some act of cognition or volition,* sensitive or rational. So far so good. But the scholastics always insisted on the evidence of experience that a "thought" or "volition" *without a subject* is never met with in our experience; we always perceive the thought and volition *in concreto,* i. e., the "*Ego thinking,*" the "*Ego willing.*" And we retort upon Hume: "If any one, upon serious and unprejudiced reflexion, thinks he has a different notion of *himself,* we must confess we can reason no longer with him." Whatever may have been the case with Hume, surely "of the rest of mankind" it is not true that they perceive "*nothing but a bundle or collection of different perceptions*" without a substantial subject.

Furthermore, while claiming that the subject of rational thought *is* simple and spiritual, we do not claim — and no scholastic ever did — that we know this *by direct experimental evidence* and "*beyond evidence of demonstration.*" Whilst the *substantiality* of the subject of thought is attested by psychological reflexion, its *simplicity* and *spirituality*

need demonstration.[4] Only this was claimed by the scholastics, that this very fact of *psychological reflexion* gives us the *starting-point for a reasoning process,* such as we have gone through in this chapter. It is thus we acquire the knowledge that the subject of *rational* thought is both distinct from, and intrinsically independent of, our bodily organism, i. e., the knowledge of the soul's *simplicity* and *spirituality.*

Pouring Out the Baby With the Bath.

It may be well to add that it was always recognized by the scholastics that the concept we thus acquire of a *spiritual substance* is only an "*analogous*" one, and hence much more *imperfect* than the concept of a *material* thing which falls under our senses. This is so true, that *of the peculiarity* of a spiritual substance, of that, namely, which *distinguishes* it from a material substance, we have only what was technically called a "*negative-positive*" con-

[4] The teaching of St. Thomas on this point is very explicit. "Anima cognoscitur *per actus suos.* In hoc enim aliquis percipit se animam habere, et vivere et esse, quod percipit *se sentire et intelligere*" (Q. D. De Veritate, q. 10, a. 8, in c.). "Secundum hoc scientia de anima est certissima, quod unusquisque in se ipso experitur se animam habere, et actus animae sibi inesse; *sed cognoscere quid sit anima, difficillimum est*" (l. c. ad 8). "Ad secundam cognitionem de mente habendam . . . *requiritur diligens et subtilis inquisitio*" (S. Theol., p. I, q. 87, a. 1, in c.).

cept. The spiritual soul is a *substance:* that is the positive element; it is, however, *unlike* the material substance: it is "*im-material,*" i. e., *not material;* and this is the negative element. But, as we have pointed out before, it is one thing to say that our knowledge of a thing is *imperfect,* in fact *very imperfect,* and quite another thing to say that we have *no knowledge at all.* Those who reject *all* knowledge of the spiritual soul, because in our present life it is, and must necessarily be, *imperfect,* do what a dissatisfied nurse is warned not to do: they "pour out the baby with the bath," as a German proverb has it.

Chapter VIII

The Spirituality of the Soul. Free Will: The Fourth and Greatest Stumbling Block of Materialism

THE argument from perfect psychological reflexion has proved another, the third stumbling block to materialism. We must turn our attention now to a fact which, though of every day experience, has been termed the greatest of the Seven World Riddles: the stubborn fact of personal freedom, or *free will.*

The subject of free will is such an important one in its every aspect, but especially in combating the materialism of our days that it should receive a more thorough treatment than we can give it here within the limits of our present discussion. The reader, therefore, is referred to a monograph on this subject which the author issued some time ago.[1]

[1] Cf. Free Will, The Greatest of the Seven World Riddles, Herder, St. Louis, 1911. If apology be needed for the repetition in this chapter of some passages from this monograph, my excuse is that it is not so easy to express to one's own satisfaction the same thought in two ways.

Every one knows by the unmistakable testimony of his consciousness that certain actions are beyond his control and that others depend on his free choice. Such is the verdict of all mankind; and if modern psychologists deny the fact, they know that they do so only because of their *preconceived notions of materialism* — free will really does not fit into mechanics. They know that they speak against their better knowledge just as the skeptics do who do not expect their doctrine to be taken seriously by their fellow men and least of all by themselves. In practice, even the most advanced modern psychologist denies what he professes in the lecture room or in written books. As the Roman poet or philosopher of common sense has said with a keen insight into human nature: "Naturam expellas furca, tamen usque recurret." The late Dr. Thomas Dwight, professor of anatomy at Harvard, in an excellent book published recently under the title "Thoughts of a Catholic Anatomist" puts it thus:

"Universal usage throughout civilization (and indeed in uncivilization) tells us that in every detail of intercourse among men we recognize the existence of free will. The state of mind that denies it

is not one of enlightenment, but of muddleheadedness" (l. c. p. 155).

We shall not enter into the details of the experimental, moral and teleological proofs of free will; nor is this necessary, for the *fact* is too patent, and the *moral* aspect of the question has made even James admit reluctantly that determinism, though a perfect mechanical fit, is a bad moral fit. And as to the *teleological* aspect of the problem, *rational* man without free will is worse than a bird without wings, or a watch without face and hands: he is *a king without sceptre and crown.* All attacks on the doctrine of free will are at best only backed by *misrepresentations of the problem.*

Free choice is not willing without motive, but it is choosing *among motives.* All that materialists say against willing without motive, and against a causeless volition, is directed against a caricature of free will and leaves our doctrine intact. And their answers to our arguments are in reality destructive of all science. When they say with Spinoza that the experimental evidence from introspection is not to be relied upon because it is a delusion, our adversaries cut from beneath them

the branch on which they are sitting. For, if the unmistakable testimony of consciousness leads us into error, what source of knowledge remains trustworthy? If one source is deceiving, why not the others?

How suicidal such an attack is, will become more apparent when we recall that the testimony of consciousness, though not a universal criterion of truth, is a necessary condition for the acquisition of any truth through any source whatsoever. If, then, Spinoza's answer to our experimental argument is allowed to cast even a doubt on our doctrine of free will, we must declare absolute bankruptcy of all sciences, and there remains for us only the self-contradictory position of the universal skeptic. We take it then that our will is free.

The Riddle of the Sphinx.

The Sphinx of old stopped the wanderer on the mountain path and proposed her riddle. The perplexing question with which she confronts materialists is: *How do you explain free will?* There was a time when Du Bois-Reymond thought that analytical mechanics could be expected — in the distant future of course — to offer a rational solution of this problem. But the day of Damascus came for

him, as he himself expresses it, and he acknowledged the hopelessness of such an attempt.

It is not difficult to see how diametrically opposed free choice is to the mode of action which characterizes the agents with which mechanics deals. A simple illustration will make this clear. When a body is pulled in one direction with a force of 5 pounds and in another with a force of 3 pounds, we can determine beforehand by the parallelogram of forces in which direction it will go. If "willing" were indeed but "a mode of motion," a peculiar kind of molecular vibration in some nerve-centre of the grey matter of the brain, and if the "moral forces" of conflicting motives, acting on the will, could be weighed in pounds, then it would be possible to predetermine by something analogous to the parallelogram of forces, which way the will is going to be inclined. Then, of course, our will would not be free. To have something like free choice or self-determination, we must discard the parallelogram of forces and conceive the body thus acted upon, to take its own attitude and determine its own direction of motion. We wonder no longer that Du Bois-Reymond was in sheer despair over the prob-

lem how to fit the stubborn fact of free will into mechanics.

As to the other material agents, those of the organic realm, though their activities are essentially superior to those of inorganic matter, and cannot be explained on the principles of mechanics, still they too are governed by *physical necessity*. As far as our argument is concerned we are independent of this essential distinction between the realm of the inorganic and organic, between the vegetable and animal kingdom. Still it is well to emphasize the fact. The more the phenomena of assimilation, growth and reproduction are studied — not to speak of the phenomena of sensitive life — the more it becomes apparent that plants and animals do not act like machines. Suffice it to mention Prof. Haldane of the British Academy of Sciences,[2] and Prof. Hans Driesch of Heidelberg,[3] undisputed authorities

[2] Cf. Nature, Oct., 1908.

[3] Cf. The Science and Philosophy of the Organism, Gifford Lectures, Vol. I. pp. 118–149, 214–242.

Dr. Dwight, in the book referred to above, says: "It is very gratifying to see how much progress the cause of vitalism has made in the last twenty years. It is no longer merely Catholic, but is winning its way towards general acceptance. One school, and unfortunately the prominent one in the eyes of the ignorant refuses it utterly: and from its very nature must do so. It is that of 'the mountain,' if I may again take a figure from the times of the French Revolution. Weismann, one of its orators, speaking of natural selection, after declaring that we must accept it although we cannot prove it,

on matters physiological, who more and more realize the insufficiency of any mechanistic explanation of life even in its lowest manifestations. But the testimony of an exponent of physiological psychology may not be out of place. Prof. Ladd writes:

"No mathematical formula, or picture framed by the imagination, has thus far bridged over the gap between the molecular energy of inorganic and that of organic structures. In discussing the phenomena of general nerve-physiology, it was made obvious at every turn that even the behaviour of the vital nerve-muscle machine under the influence of electrical or other excitation cannot be accounted for by any conceivable application of the known laws of those forces that move unorganized particles of matter. Nerve-force — what it is and what it will do; what it *is* as judged by what it will do — cannot, at present, be correlated with any of the forms of energy which act as nervous stimuli" (El. of Phys. Psych., p. 657).

But for the purposes of our present argument we are altogether independent of any return to vitalism. If vital phenomena can be explained on the known principles of mechan-

continues: 'just as the view of modern physiologists that there is no peculiar vital force is not negatived though to this day we cannot explain even a single vital process by purely physical forces.' Such language, indeed, tickles the ears of the *sans culottes* of science, but is beneath the contempt of the man taking reason for his guide." (l. c. p. 146.)

ics, our argument from free will is so much the stronger. If they cannot be explained on such principles, there remains the fact that vegetative and sensitive functions, though superior to those of inorganic matter, are all governed by *physical necessity;* a necessity without which the various departments of biological sciences would lack their basic principle, viz., *uniformity of nature.* Man, when exercising his power of free choice, is *immune from such necessity.* The free will of man is not subject to the law which holds sway over all material agents; the law of uniformity or "invariable sequence," as it is sometimes called. There exists, then, a realm of nature distinct from and not less real than matter. The agent which is capable of free choice cannot be a material agent; it must be a simple being intrinsically independent of matter; it must be *spiritual;* and this spiritual being we call *soul.*

"Because I Want It."
"Car tel est notre bon plaisir."

We can make the same proposition clear by another consideration. Free choice involves *perfect reflection,* or a turning of the will back on itself. For free choice, as we have insisted, consists in choosing *among* conflicting

motives intellectually apprehended, as for instance between pleasure and duty. If, therefore, I choose to let the motive of duty prevail in preference to that of pleasure, my will determines its own course of action: *I will my willing,* just as in the act of intellectual introspection *I know my knowing.*

We frequently express this perfect reflection of the will. Let us consider a practical example of choice. A physician, just ready to go to a theatrical performance which interests him intensely, receives a summons to a person dangerously ill. Here are pleasure and duty trying in turn to gain the approval of the will. Though disappointed he visits the sick person. A medical friend of his finds himself at the same time in a similar predicament. He too is disappointed and says he is busy now, they must call on Dr. So and So, and he goes to the theatre. If you ask the one why he chooses to go to the sick person, and the other why he chooses to go to the theatre, each answers you by first indicating his motive. For a free volition is not a volition without a motive. But if you ask further why each allows this particular motive to prevail in preference to the other equally proposed, he will answer — and he cannot give any other

answer,—"*because I want it.*" This "*I want it*" expresses the perfect dominion we have over the acts of our will; it expresses the *perfect reflection,* the turning of an indivisible and spiritual agent back on itself.

But it is needless to add further proof for the proposition that a free agent cannot possibly be a material agent. Our adversaries grant this; for it is precisely the *assumption* of materialism that makes them deny free will. Free choice, then, no less than rational thought, cannot be the function of a material agent. Hence the soul, the ultimate source of willing and thinking, is intrinsically independent of the body: it is a *spiritual substance.*

Answers of Materialists.

The principal answer of materialists to our argument is the one formulated by James:

> "The argument from free will can convince only those who believe in free will" (Pr. of Ps. I., p. 346).

We have absolutely nothing to add to what we have said on this head when expounding the argument. We wish only to remark that James' reply strikes us as peculiarly odd, as

he himself believes in free will, although on ethical grounds only.

"It is a moral postulate (he says) . . . that what *ought* to be *can* be, and that bad acts cannot be fated, but that good ones must be possible in their place" (l. c. II., p. 573).

His final verdict (i. e., in *this* chapter) is:

"Freedom's first deed should be to affirm itself" (l. c. p. 573).

But this leaves the pragmatist with his shifting truth — one for ethics, another for "science"; one for this chapter, another for that. It leaves him perfectly free to assert or deny freedom just as it suits his purposes, in accordance with his great formula of pragmatism: *True is what is useful.*

Prof. James adds that even those who believe in free will

"have to admit that spontaneity is just as possible, to say the least, in a temporary spiritual agent like our 'Thought' as in a permanent one like the supposed Soul" (l. c. I, p. 346).

We have said enough on this disclaimer of "materialism" in the last chapter, and meet the assertion with a simple denial.

The Principle of Conservation of Energy.

But there is one difficulty which, at first sight, looks somewhat more serious, and is urged very frequently by modern psychologists. It is the objection drawn from the principle of *Conservation of Energy*. Although in discussing the subject of free will we are, as the present writer has insisted in his monograph on the subject, concerned directly only with the *internal* acts of the will, and not with the control our will exercises over our bodily faculties; still, as a matter of fact, our free will does, within definite limits, exercise such a control: it originates movements in matter. But if this be true, what about the principle of conservation of energy? By this very control is not the amount of energy increased?

Not Identical, nor on a Par with the Principle of Causality.

Much of the reverential awe which some people feel when the sacred principle of conservation of energy is mentioned, is due to the fact that it is — openly or by implication, intentionally or by mere mistake — confounded with, or at least thought to be on a

par with, the principle of causality. Hence an *increase* in the total amount of energy in this universe is considered to be as unthinkable as an effect without a cause. *Now this is a grave error.*

The principle of conservation of energy is not a self-evident truth, nor is it an analytical principle. It is not found by analysis of concepts but by actual research work. We quote from Helmholtz's Popular Lectures:

"The possibility that it was of universal application was first stated by Dr. Julius Robert Mayer, a Schwabian physician . . . in the year 1842, while almost simultaneously with, and independently of him, James Prescot Joule, an English manufacturer, made a series of important and difficult experiments on the relation of heat to mechanical force, which supplied the chief points in which the comparison of the new theory with experience was still wanting" (Pop. Lectures, transl. by E. Atkinson, Appleton, New York, 1881, p. 320).

The history of this "new theory," then, can only be traced to the year 1842, when James Prescot Joule determined the "mechanical equivalent of heat." Hence scientists of the first rank are extremely careful in speaking of and formulating the principle. We quote from Maxwell's Theory of Heat:

"We cannot even assert that all energy must be either potential or kinetic, though we may not be able to conceive any other form. Nevertheless, the principle has been demonstrated by dynamical reasoning to be absolutely true *for systems fulfilling certain conditions,* and it has been *proved by experiment* to be true within the limits of error of observation, in cases where the energy takes the forms of heat, magnetisation, electrification, etc., so that the following statement is one which, if we cannot absolutely affirm its necessary truth, *is worthy of being carefully tested,* and traced into all the conclusions which are implied in it."

Then follows a most cautious wording of the law, which — as will be seen — leaves our doctrine of free will and the spirituality of the soul entirely untouched. He says:

"The total energy of any body or system of bodies is a quantity which can neither be increased nor diminished *by any mutual action of these bodies,* though it may be transformed into any of the forms *of which energy is susceptible"* (Maxwell, Theory of Heat, ch. IV, ed. 7, Appleton, 1883, p. 92 sq.).

An Empirical Generalization.

The principle of conservation of energy, then, is only an *inductive* principle, i. e., a generalization founded on induction and has been established with tolerable accuracy for some

"closed system" of bodies. It asserts merely that the material energy within this "closed system" cannot be increased *by any mutual action of these bodies* within the system; the question whether such an increase of material energy could be effected by the activity of a *spiritual agent* on a body or system of bodies, it does not touch.

Serious doubts are expressed by more than one authority in matters scientific as to the applicability of the principle to the realm of the organic world.[4] For the purposes of our present discussion we may waive these doubts. Though there is more than physics and chemistry involved in the functions of living organisms, still a mere *quantative* correlation of the energy used in such organic functions with the energy derived from the inorganic world offers *a priori* no serious difficulty; and the

[4] Suffice it to quote *Hertz* whose authority in scientific matters is beyond all dispute. He says: "Es ist gewiss gerechtfertigte Vorsicht, wenn wir im Texte das Gebiet unserer Mechanik ausdrücklich beschränken auf die *unbelebte Natur* und die Frage vollkommen offen lassen, wie weit sich ihre Gesetze darüber hinaus erstrecken. In Wahrheit liegt die Sache ja so, dass wir weder behaupten können, dass die inneren Vorgänge der Lebewesen denselben Gesetzen folgen, wie die Bewegungen der leblosen Körper, noch auch behaupten können, dass sie anderen Gesetzen folgen . . . *Unser Grundgesetz, vielleicht ausreichend, die Bewegung der toten Materie darzustellen, erscheint wenigstens der flüchtigen Schätzung zu einfach und zu beschränkt, um die Mannigfaltigkeit selbst des niedrigsten Lebensvorganges wiederzugeben*" (quoted by Ludwig Busse. Geist und Körper, Seele und Leib, Leipzig, 1903, p. 464).

principle of conservation of energy, as applied to the organic world, implies no more than such a *quantative* correlation.

An Unwarranted Extension of an Empirical Generalization.

We must, however, question the sweeping generalization of the law, as contained in the formula of Helmholtz:

"The quantity of force which can be brought into action in the whole of Nature is unchangeable" (l. c. p. 320);

for this is — so far — an unwarranted extension of an empirical generalization. But especially do we protest against its elevation to the dignity of an *analytical* principle which must, *a priori,* be applicable to all phenomena of nature, both physical and mental. Possibly the principal has universal application without implying any materialism; but this is not evident *a priori.* Hence the principle, thus extended, cannot be used as an objection against *established facts* of the mental order.[5] It is

[5] Prof. Ostwald, the exponent of "energetics" put forward a rather curious hypothesis on the laws of energy as applied to mental life. His paper read at the Fourth International Philosophical Congress at Bologna (La Volonté et sa base physique) is synopsized in Nature (May 18, 1911, p. 400) as follows:

"What meaning have the laws of energy applied to mental

refreshing to see an exponent of physiological psychology enter such a protest. Prof. Ladd writes:

"The law of the conservation and correlation of energy — as far as it has been observed, or can reasonably be assumed to hold good — offers no valid objection to the existence of a real causal connection between the mind and the brain. The present position of this law is that of *an empirical generalization,* found to hold approximately true for a large number of classes of phenomena, and presumably true for yet other classes. *To exalt it to the place of a universal and necessary relation among all phenomena of every class — mental as well as physical — would be unwarrantably to extend its application*" (El. of Phys. Psych., p. 657).

life? Just this — that whatever else mental life is, it has to work *inside the limits of the second law of thermo-dynamics.* Each individual is occupied all its life with the task of making circulate through its own body a part of the general course of 'free' energy on its way to energy of a lower intensity; and further, as only part of this energy can be usefully employed, the rest being wasted in heat, so whatever else mental life may be it must first be directed towards getting as much out of this dissipation as possible. In the effort to increase this percentage, to save energy, comes, in Ostwald's opinion, the whole phenomenon of the will. He does not pretend that the second law is an adequate explanation of all mental processes, but it is the conditioning framework inside of which all the rest must work" (Nature, l. c.).

In his "Vorlesungen über Naturphilosophie," discussing the relation between material energy and the spiritual phenomena of intelligence and free will (p. 373 sq.), he insists that the latter arise through a *process of transformation of material energy* (p. 377). *Free will* in particular, by which he understands immunity from external coaction only, is a phenomenon whose peculiar character must be explained through the agency of *definite catalytic agents,* and is, therefore, in its last analysis *a chemical phenomenon* (cf. Friedrich Klimke, S. J. Der Monismus, Freiburg, 1911, p. 103).

In his "Philosophy of Mind" Ladd uses even more vigorous language.

"The feeling of awe before the sacred principle of the conservation and correlation of energy, as though it were a near approach to blasphemy to suggest that this principle may be utterly inadequate (not to say totally irrelevant) to set forth relations of psychic phenomena has exercised an unduly depressing influence on modern psychology" (quoted by Ludwig Busse, l. c. p. 465).

If the principle of conservation of energy has universal application, so that our whole universe represents a "closed system" of material energy, this must not be understood to mean that there occurs a transformation of "*physical energy*" into "*psychical energy.*" Such a causal connection between the "physical" and "mental" we deny absolutely on the strength of our arguments against materialism. Even materialists of the *soft* type are willing to admit that every attempt to thus correlate mental phenomena with the various forms of material energy has been a signal failure.

A Preposterous Perversion of First Principles of Exact Sciences.

To make use, then, of the principle of conservation of energy to disprove and undo a

fact of experience, viz., the evident control our free will exercises over our bodily organism, would be a preposterous perversion of the first principles of exact sciences. For generalizations concerning natural phenomena must fit the facts, and not conversely, i. e., facts must not be made to fit the generalizations. Nor must legitimate conclusions from such facts be denied, because they do not fit generalizations thus unwarrantably extended.

If, therefore, facts should prove an increase of the total amount of material energy in this universe, then these very *facts* would forbid such an extension of an empirical generalization. And would this be unthinkable? Only if this empirical law be confounded with the principle of causality, would such an increase be unthinkable. The principle of causality states: *"Whatever begins to exist has an efficient cause"* or in another formula: *"Every contingent being has an efficient cause."* The increase of the total amount of energy would have an efficient cause, for the *spiritual agent* would be the efficient cause. And such an increase, if postulated, would not imply any *"creation"* in the sense in which scholastics use the term. Energy is *no substance,* but an accidental modification of

bodies. We must beware of the error of Prof. Ostwald and other dynamists who, in the same breath deny the substantiality of matter and *substantialize energy*. Our first answer, then, to the difficulty proposed is: *What of it, if free will and the spirituality of the soul imply an increase of material energy in this universe?*

Second Answer to the Difficulty.

We might rest our case here. But do free will and the spirituality of the soul really imply such an increase? It would seem that this is not necessarily implied. The action of the soul on the body may be conceived as that of a *directive* and *releasing* cause, which leaves the quantity of material energy used in bodily movements quite intact. It is a well known fact that even material agents may modify the *direction* of a force without increasing its energy. Thus the pressure of the rails on the sides of the wheels directs the moving railroad car without increasing its energy. Why could the action of the soul on the body not be conceived after the analogy of such a directive force? We designedly say "*after the analogy*" of such a directive force; the import of this phrase will become clear in our subsequent discussions.

And as to *releasing* causes. The turning of the electrical key which results now in the incandescence of the lamp, now in the ringing of the bell, now in the blasting of a huge rock, etc., does not convey the energy needed for these various results but only releases the energy already present in the system. The difference in the result depends on the structure of the machine used for the transformation of energy. However numerous and various the *qualitative* changes in the transformation of energy, the *quantity* of the energy thus transformed remains unchanged. Could we not conceive that the soul originates movements in the body in an *analogous manner,* namely by merely *releasing* the potential energy stored up in the living tissues and derived in their entirety from the food materials?

The Difficulty Intensified by the Answer.

But this very illustration of *releasing causes* creates a new difficulty. True, the energy of the system which is released by the turning of the electrical key, is left unaltered; but *the very turning* of the key also requires some energy, which, be it ever so slight, means an addition to the energy present in the system.

Increase, if Postulated, would be Infinitesimal.

To which we answer first of all, that such an increase of energy, if postulated by the action of the soul on the body, would be so *infinitesimal* that the most carefully conducted experiments of Prof. Rubner[6] would never detect it, for it would ever remain below the limits allowed for experimental error. Still such an increase, though practically imperceptible, would not save the universal applicability of the principle of conservation of energy.

Even an Infinitesimal Increase not Necessary.

Since, therefore, this is not the principal consideration, we answer, secondly, that even such an infinitesimal and imperceptible increase is not necessarily involved in the releasing action of the soul on the energy of the body. For we must not forget that the example of a material releasing cause — the turning of the electrical key — is a *mere analogy,* and must not be pressed beyond the limits of a mere analogy. The human soul

[6] Max Rubner, Prof. in Berlin and director of the hygienic institute there, has become prominent especially by his investigations in the field of physiology of nutrition and animal heat. Cf. his "Gesetze des Energieverbrauchs bei der Ernährung" (1903); and "Kraft und Stoff im Haushalt der Natur." Akad. Verlag. (1910).

is a *spiritual* being, the electrical key is a *material* thing; both may be conceived as releasing causes, but we must beware of applying the term *univocally,* i. e., in exactly the same sense. The electrical key cannot be turned except by *physical impact;* the action of the spiritual soul on the body implies *no physical impact.* And if no physical impact is implied, then no increase of material energy, however slight, is involved in such a releasing action of the soul on the body.

The Scholastic Doctrine Supplies the Best Solution.

The proposed solution of the difficulty receives additional light from the scholastic doctrine concerning the *substantial union of soul and body.* The soul is not a spirit "possessing" the body; it is not a foreign agent dwelling in the body. The scholastics have always rejected such a conception. Though their terminology is very unfamiliar to modern ears, the rejection of such a conception is conveyed, when they denied that the soul is a "forma assistens" (assisting form), exemplified, for instance, by *a rider on a horse.* True, the soul in its highest functions — rational thought and free choice — is intrinsically independent of the body, because it can-

not communicate these functions to the body; still the soul is at the same time truly the last source of all organic functions — those of the vegetative and sensitive order. It is, in fact, the "*entelecheia*" of the body, the "actus primus materiae," i. e., that substantial determination by whose union with its material partner the latter, of itself indifferent, is "specified" or put into a definite species of bodies.[7] The soul, then, is no intruder into the realm of material energy and thus the old Aristotelian and scholastic conception offers the most radical solution of the strictly modern difficulty, drawn from the law of conservation of energy.[8]

Now the reader will understand why in a former chapter we explicitly disavowed every theory of "*interaction*" between mind and body, i. e., of an "interaction," *as understood in modern discussions* between "psycho-physical interactionists" and "psycho-physical parallelists." When we, in accord with the doctrine of Aristotle and the scholastics, speak of "*interaction*," this term must be understood to

[7] Without the soul there is no human body; it is the soul that, as a formal principle, constitutes this very body.

[8] Cf. Michael Maher, S. J., Psych., ed. 4, p. 517–523, and the article on "Energy," by the same author, in the Catholic Encyclopedia.

safeguard the *substantial union of soul and body.*

And with this we bring our discussion to a close. Free will has proved to be another, in fact the *greatest* stumbling block of materialism. Whether the law of conservation of energy is really of universal application in this material universe, is a matter of indifference to us; for it is only an empirical generalization. At the same time we insist that it is by no means inconceivable that the law *has* universal application without implying any materialism. At any rate, an appeal to the law against so evident a fact of experience as free will, and against the spirituality of the soul which we have established by arguments, every one of which has proved a veritable stumbling block to materialists,— any such appeal, we say, is an abuse of an empirical principle, warranted only by preconceived ideas of materialism.

Conclusion.

A word more in conclusion. The step from the *substantiality, simplicity* and *spirituality* of the human soul to its *immortality* is only a logical development of the doctrine set forth in the course of our inquiry, especially when, in addition, the *moral* aspect of human life

with its responsibility is considered. At any rate the gravest difficulty urged by materialists against a life beyond the grave is solved, namely that drawn from the "great psycho-physical formula: Thought is a function of the brain." This formula needs a thorough revision, if we do not want to exaggerate the *grain of truth* which it contains and which we have set forth in our fourth chapter.

And this is not the "human immortality" which James defends — that "mother sea" which has been thinking for what we call our "Selves," will continue to think after "our" brain ceases to exist.[9] No, immortality implies a continued conscious existence of an individual, simple, spiritual being; it implies the immortality which James sneeringly said, he *did not care for* (Pr. of Psych. I, p. 348).

But the detailed discussion of the various arguments for actual immortality, and of the various aspects the life beyond the grave offers, is outside the scope of this treatise. We are satisfied with having proved that materialism has signally failed to establish its main objection against such a life beyond the grave.

[9] Cf. James, Human Immortality, especially p. VII, pp. 18 and 58, note 5.

Glossary

This glossary is intended for the convenience of lay readers. It contains popular descriptions rather than strict definitions of unfamiliar terms.

Agnosticism (a- priv., "gignosko," Greek,= know), literally "know-nothing-ism"; the attitude of those who profess their ignorance even with regard to first principles, and especially with regard to the fundamental truths of religion (the existence of God, of a spiritual soul, immortality, etc.), which, it is maintained, can neither be proved nor disproved, but are insoluble problems; all of which is expressed in the famous motto "Ignoramus et ignorabimus" (q. v.).

Allotropism, change of physical properties without change in the constitutive elements.

Analogous, applied to several things in partly the same, partly a different meaning; opposed to univocal (q. v.).

Areas (of the brain), portions of the brain surface; **anterior area**, situated in the forehead; **association a.**, connected directly with other portions of the brain surface by the so-called "association fibres" (q. v.); **body sense a.**, subservient to the perception of bodily movements, pains and pleasures; **motor a.**, controlling bodily movements; **parietal a.**, situated near the (right and left) walls of the skull; **posterior a.**, situated in the back of the head; **sense a.**, subservient to sensation; **temporal a.**, situated near the temples.

Atrophy, wasting or withering of some part of the living body.

Car tel est notre bon plaisir (formula appended by the French kings before the revolution to their decrees), for such is our good pleasure.

Carbonic acid, an incombustible gas (CO_2), preferably called "carbon dioxid"; a product of metabolism (q. v.) given off by man and animals in respiration and perspiration; the product of the complete combustion (oxidation) of carbon; formed in the process of decomposition or decay of all organic substances.

Catalytic agents, substances which by their presence (effect or) accelerate a chemical reaction but remain themselves unchanged; largely distributed in nature, especially in the organic world.

Cholesterin, a chemical compound found in the brain and other parts of the human body.

Conceptualist, one who admits that we have universal ideas but maintains that they are mere figments of the mind; **conceptualistic,** pertaining to the doctrine of conceptualists.

Condyle (from the Greek "kondylos" = knuckle or joint), a swelling connecting two bones to form a joint.

Convolutions, the windings or foldings of the brain surface; **frontal c.,** in the forehead; **occipital c.,** in the back portion of the head.

Cortex, the outer layer of the brain; **cortical,** pertaining to the cortex.

Creatin, a chemical compound contained in muscle flesh, also in the brain and blood.

Cyst, a sac resembling a bladder.

Determinism, the doctrine which denies free will and maintains that every voluntary act is the inevitable result of its antecedent conditions.

De mortuis nil nisi bonum (Latin), of the dead nothing (should be said) but what is good.

Dialyze, to pass a liquid through a membrane (for instance through the walls of the intestines).

Dynamist, one who tries to explain all physical phenomena by (mechanical) forces but denies the reality of extension or even of substance.

Empirical school, those who are opposed to metaphysics and hold that all knowledge comes exclusively from experience.

Energetics, the philosophical doctrine which tries to apply the laws of mechanical energy (q. v.) to all phenomena of nature, even to those of sensitive and rational life.

Energy, capacity for doing mechanical work.

Ergograph, literally a "work-writer" ("erg," in physics,= the unit of work and energy; "graphein," Greek,= write), an instrument devised by Mosso to test the efficiency of human muscles doing work. It is so constructed that the rhythmical voluntary contractions of a muscle, lifting a weight, are recorded on a moving drum in the form of a curve which indicates both the gradual fatigue of the muscle and the work done.

Fibre, the thread-like constituent of anything, for instance of a nerve (q. v.); **association fibres**, nerve fibres connecting directly the motor (q. v.) and sense areas (q. v.), and found in the association area (q. v.).

Flexor digitorum sublimis (literally "the upper bender of the fingers"), one of the muscles whose function it is to bend the finger.

Ganglia (plural of ganglion), aggregations of nerve cells, resembling knots; **hemispherical g.**, found in the hemispheres (q. v.); **sensory g.**, subservient to sensation.

Genetic (from the Greek "genesis" = origin), relating to the origin of something.

Hemispheres, ("hemi," Greek,= half), the two halves of the large brain, having each approximately the shape of a half-sphere.

Histological, pertaining to histology, i. e., the science which treats of the tissues of the living body.

Hylozoism (from the Greek "hyle" = matter, "zoe" = life), the doctrine that all matter is endowed with life.

Ignoramus et ignorabimus (Latin), we don't know, and we won't know.

Internal senses, senses exercised by an internal organ (the brain), as for instance imagination.

Isomerism, the condition of bodies, which contain the same elements and in the same proportion by weight, but have different properties (explained, in terms of the atomic theory, by a different arrangement or linkage of atoms).

Kymograph (literally "wave-writer," from the Greek "kyma" = wave, "graphein" = write), an instrument frequently used in physiological laboratories to record, for instance, the contractions of a muscle on a moving drum, the record thus taking the form of a wave.

Lobes (of the brain), a number of brain convolutions (q. v.).

Mens sana in corpore sano (Latin), a healthy mind in a healthy body.

Metabolism, the chemical changes involved in the building up and breaking down of a living organism (i. e., in nutrition).

Motor, controlling the movements of the body; **m. centres,** nerve cells in the spinal cord or in the brain, connected by efferent (q. v.) nerves with the organs of motion (muscles); **m. nerves,** those

efferent (q. v.) nerves which are connected with the organs of motion; **m. tracts,** an extended area of motor centres.

Myelin sheath, the fat-like insulating covering of certain nerve fibres (q. v.).

Naturam expellas furca, tamen usque recurret (Horace),=(Though you) expel nature with a pitch fork, she will ever return.

Nego paritatem (Latin)= I deny the parity, i. e., the force of the comparison; a phrase used in scholastic disputations.

Nerves, cord-like structures connecting the various bodily organs (of sensation, movement, etc.) with the controlling central organs (which are in man: the spinal cord and the brain); **afferent n.,** ingoing nerves, transmitting an impulse from the periphery (q. v.) to a centre (in the spinal cord or brain); **efferent n.,** outgoing nerves, transmitting an impulse from a centre to the periphery.

Neural, pertaining to a nerve.

Neurosis, nerve process (activity).

Nitrogenous, containing nitrogen.

Nominalism, the doctrine which denies that we have universal ideas and holds that all universality is found only in names (from the Latin "nomen" = name).

O si tacuisses, philosophus mansisses! Oh, if you had only kept quiet, you would have remained a philosopher.

Palæontological, referring to palæontology, i. e., the science which studies the fossil organisms (the petrified remains of organisms which lived in former periods of our earth formation).

Peptones, soluble proteid (q. v.) food stuffs (contained for instance in lean meat), after they have been acted upon by the pepsin of the stomach.

Periphery, the outer surface of something, in particular the surface of the human body containing the end organs of sensation and movement.

Pineal gland ("pineal" = shaped like a pine cone), a cone-like organ of the brain, which according to Descartes was the seat of the soul.

Positivism, the doctrine which limits the knowledge of man to the facts of the physical sciences.

Pragmatism, the modern doctrine which admits no unchangeable truth but treats all truths after the manner of working hypotheses, which are accepted or rejected according as they are useful, or are so no longer; an old error rejuvenated.

Proteids, nitrogenous (q. v.) food stuffs, contained for instance in lean meat.

Proton pseudos (Greek, literally "the first lie") the fundamental erroneous supposition from which other errors naturally follow.

Quousque tandem abutere patientia nostra! (Latin) How long will you abuse our patience!

Sensorium, organ of sensation.

Teleological (from the Greek "telos" = end, "logos" = science), referring to teleology, i. e., the doctrine of final causes or design in nature, especially in the organic world.

Thomism, the doctrine of (or ascribed to) St. Thomas or his school.

Trilobite, a crab-like extinct species of animals, found in the lowest strata of the earth formation, living in the so-called "palæozoic age," i. e., in the oldest period of life on our globe; frequently referred to in discussions of the theory of evolution.

Trophic action, an action regulating the nourishment of the body or one of its parts.

Univocal, applied to several things in exactly the same meaning.

Vitalism (from the Latin "vita" = life) the doctrine which rejects the mechanical explanations of life and insists on the reality of the principle of life, viz., the soul.

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